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ANNUAL REPORT
of the
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF
SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30, 1948

ANNUAL REPORT
of the
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30, 1948

ELMER E. ROBINSON

MAYOR

THOMAS A. BROOKS

CHIEF ADMINISTRATIVE OFFICER

HARRY C. VENSANO

DIRECTOR OF PUBLIC WORKS

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CITY HALL

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS

November 1, 1948

OFFICE OF THE
DIRECTOR OF PUBLIC WORKS

360 CITY HALL
SAN FRANCISCO 2,
CALIFORNIA

The Honorable Thomas A. Brooks
Chief Administrative Officer
City and County of San Francisco
California

Dear Sir:

In accordance with the provisions of Section 20 of the Charter of the City and County of San Francisco, I herewith submit the Annual Report of the Department of Public Works for the fiscal year ending June 30, 1948.

This department is responsible for the planning, construction, and maintenance of public buildings, streets, tunnels, bridges, traffic control devices, sewers, and sewage treatment plants. The department is also responsible for the operation of the sewerage system, and supervises all private building work. The various functions of the department are performed by nine bureaus, as indicated by the accompanying organization chart. The personnel of the department consisted of 1197 employees at the end of the fiscal year.

Following a brief general review of the year's work, the report contains separate statements of the functions and activities of the several bureaus as prepared by the respective bureau heads.

Yours respectfully,

H. C. Vensano

H. C. Vensano, Director
Department of Public Works

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MAYOR
ELMER E. ROBINSON

**CHIEF
ADMINISTRATIVE
OFFICER**
THOS. A. BROOKS

DEPARTMENT OF PUBLIC WORKS
DIRECTOR H.C. VENSANO
ASS'T DIRECTOR SIDNEY J. HESTER

ORGANIZATION CHART

DEPARTMENT OF PUBLIC WORKS 1947-1948

CITY AND COUNTY OF SAN FRANCISCO

GENERAL OFFICE

BUREAU OF ENGINEERING
CITY ENGINEER RALPH G. WADSWORTH

BUREAU OF ARCHITECTURE
CITY ARCHITECT DODGE REIDY

BUREAU OF BUILDING INSPECTION
SUPERINTENDENT (Acting) GEO. W. MARSH

BUREAU OF STREETS
GENERAL SUPERINTENDENT PRESTON W. KING

BUREAU OF SEWER REPAIR
SUPERINTENDENT EMILE MUHEIM

BUREAU OF BUILDING REPAIR
SUPERINTENDENT RODERICK CHISHOLM

BUREAU OF ACCOUNTS
SUPERVISOR FRANK W. MCKENZIE

CENTRAL PERMIT BUREAU
HEAD CLERK SYLVAN J. ROSENBLUM

DEPARTMENT OF PUBLIC WORKS
H. C. Vensano, Director

GENERAL REVIEW OF 1947-1948

The fiscal year of 1947-1948 will go down as an important one in the history of the Department of Public Works. During this year several outstanding events took place.

1. A completely rewritten new Building Code, in preparation for the last two years, was formally adopted August 12, 1947.
2. The Collier-Burns Highway Act of 1947 was approved by the Governor on June 23, 1947 and became effective July 1, 1947. The effect of the Bill was to allocate to San Francisco yearly for major street construction and maintenance approximately \$2,000,000 of additional revenues from gasoline taxes.
3. Street Improvement Bonds in the amount of \$22,850,000 were approved by the people at an election held on November 4, 1947, the vote being 181,599 in favor and 49,932 against, a ratio of more than three and a half to one.
4. Bids were taken for construction of the North Point Sewage and Sludge Treatment plants in February 1948, but were rejected on March 15 of that year as they had over-run our estimates by more than \$3,000,000.
5. Following this, Sewage Treatment Bonds in amount of \$15,000,000 were voted at a special election on June 1, 1948 to provide funds for additional Sewage Treatment Plants, including both the North Point Plant and the Southeast Plant. The vote was 154,133 in favor and 66,077 against, a ratio of nearly two and a half to one.
6. In the City's budget for the fiscal year of 1947-1948 there was provided \$200,000 for an overall survey of traffic and transportation needs in the City. The Technical Committee of the Administrative Transportation Planning Council promptly adopted a program for utilizing these funds, and in the fall of 1947, two consulting firms of recognized standing in the fields of planning and transportation (Ladislav Segoe and De Leuw, Cather & Company) were employed to report and advise on a traffic and transportation plan to care for the needs of the City in all branches of traffic, transit, and transportation.

The appointment of these consultants and the additional financing for street and highway work have opened up a major program of work for the Department which will extend undoubtedly over many years and may, in fact, continue indefinitely with the growth of the City.

The proceeds of the Sewage Treatment Bonds combined with \$8,000,000 of matching funds obtainable from the State through the Construction and Employment Act, Chapter 20, Statutes of 1946, as amended, will provide approximately \$23,000,000 which it is hoped will complete the system of plants needed to treat all sewage originating in the City and County of San Francisco and to free all of our beaches from contamination.

The Department of Public Works therefore has unspent bond funds, prospective state subventions, and motor vehicle tax funds to accrue within the next five years, in a total approximate amount of \$60,000,000 which will be used to complete various construction programs for sewers, sewage treatment plants and street and boulevard improvements.

When the original sewer and sewage treatment plant program was first set up with the submission of the \$12,000,000 sewer bond issue to the voters in 1944, it was intended to be a twenty-year program. Since that time, public necessity for sewers and State pressure for decontamination of our shore-lines have been such as to make it necessary to complete this work as soon as possible. Given the necessary engineering manpower, this can be accomplished by 1954, thereby reducing the original program from twenty to ten years.

The street and boulevard program of 1947 was set up as a five to six-year program and was to be considered only as the first phase of a long time continuing program. The ultimate plan and program was to be fixed only after the report from the consulting group mentioned hereinabove and due in October 1948 had been considered and approved by the Technical Committee and adopted by the Administration.

However, to accomplish all of this construction in the next five years will require additional engineering manpower over that now on the payrolls of this department, or apparently obtainable at present. The reason for this condition is: (1) The fact that

trained engineers are in short supply generally throughout the United States, and (2) the very restrictive conditions of employment now in effect due to provisions of the City Charter and to rules and limitations of employment enforced by the Civil Service Commission.

In view of this shortage of emergency manpower, it has been suggested that some of the planning work be taken out of our Bureau of Engineering and diverted to outside consultants and other engineers in private employment. This is in part being done. But it should be recognized that there are several limitations on this solution of the problem: (1) The voluminous City records of such factual information as grades, widths, property lines, and other characteristics of streets and the sizes and locations of existing sewers, filed in the City Hall, cannot be easily made available to outside engineers unacquainted with them; and (2) the use of outside planners throws more work on the top administrative personnel of the Department of Public Works, who are already fully loaded, than does an addition of competent help to their own existing fully organized subordinate engineering staff.

With the finances fully provided, the progress of the entire program will finally depend on the quantity and quality of the manpower made available to the Department.

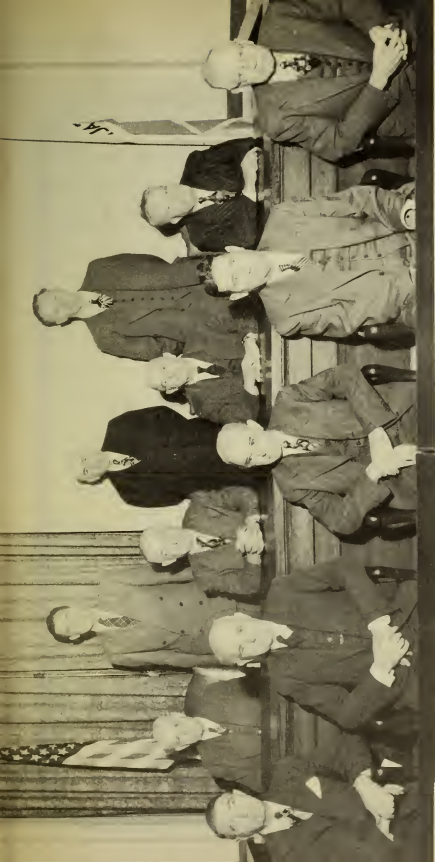
The Bureau of Architecture is similarly handicapped. Its limited technical staff has a \$7,500,000 program before it. This condition has however been considerably improved by the employment during the year of Jack Devitt as Assistant to the City Architect, and the replacement of certain personnel, lost to it by resignation at the end of World War II, through Civil Service examinations.

Most other bureaus of the department likewise are under pressure. During the war years the population of our City increased over 20 per cent. All departmental duties such as street repair and cleaning, sewer repair, and building repair increased proportionally to population. Little increase in manpower was obtainable.

However, in proportion to the manpower available, all bureaus of the department have made excellent showings for the year. The extent of the work accomplished by each will be found fully described under the specific section covering that bureau.

The final passage of the Ordinance adopting a new Building Code was a major landmark in the history of the Bureau of Building Inspection of the Department. The previous code, passed in 1909, had long since become obsolete. This ordinance was passed by the Board of Supervisors, signed by the Mayor, and made effective as of September 11, 1947.

After passage of this Ordinance and conforming to its provisions, fifteen days were given to all architects and other building designers to register work started under the previous law. Following this period the new code went fully into effect. Now, at the end of the fiscal year, it seems to be working smoothly, with little complaint arising either from architects or the public. A few amendments have been made to meet valid complaints and we believe the code is now accepted as largely satisfactory. During its compilation and since its adoption, representatives of the Fire Department, the Bureau of Fire Prevention, and the Fire Underwriters of the Pacific, have worked closely with the Department.



DIRECTOR OF PUBLIC WORKS AND BUREAU HEADS

Top row, (left to right): R. H. Owens, Senior Engineer, Bureau of Engineering; S. J. Rosenblum, Head Clerk, Central Permit Bureau; S. P. Duckel, Assistant City Engineer

Second row: Geo. W. Marsh, Acting Supt., Bur. of Bldg. Inspection; R. Chisholm, Supt. Bureau of Building Repair; F. W. McKenzie, Supervisor, Bur. of Accounts; E. Muhelm, Supt. Bur. of Sewer Repair.

Front row: S. J. Hester, Asst. Director, Dept. of Public Works; R. G. Wadsworth, City Engineer; H. C. Vensano, Director, Dept. of Public Works; D. Reidy, City Architect; P. W. King, Gen. Supt. Bureau of Streets

BUREAU OF ENGINEERING

DEPARTMENT OF PUBLIC WORKS

ORGANIZATION CHART

1947-1948

CITY ENGINEER
ASST CITY ENGINEER

STAFF SECTIONS

ADMINISTRATION
CONTRACTS-PERSONNEL
PURCHASING

SURVEYS & MAPPING
STREET GRADES
SUBDIVISIONS

STAFF SECTIONS

RESEARCH & REPORTS
FRANCHISE REPORTS
RESEARCH-SANITARY FILL

PROGRAMS & BUDGETS
STATE AID-PLANNING
PROGRAMS

LINE DIVISIONS

DIVISION OF STREETS & HIGHWAYS

- 1-STREET IMPROVEMENTS
 - (a) PLANS & RECORDS
 - (b) ASSESSMENTS & PERMITS
 - (c) MISCELLANEOUS INSPECTIONS
- 2-HIGHWAYS
- 3-TRAFFIC & SAFETY
- 4-TRACK REMOVAL CONTRACTS
- 5-SPECIAL ASSIGNMENTS
- 6-TRANSPORTATION PLANNING

DIVISION OF DESIGN

- 1-STRUCTURAL
- 2-SEWERS
- 3-SEWAGE DISPOSAL
- 4-MECHANICAL
- 5-ELECTRICAL
- 6-AUXILIARY WATER SUPPLY
- 7-UNDERGROUND STRUCTURES
- 8-ADMINISTRATIVE & CONTRACTS
- 9-ESTIMATES

LINE DIVISIONS

DIVISION OF CONSTRUCTION

- 1-INSPECTION
- 2-TESTING LABORATORY

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

- 1-LABORATORY
- 2-OPERATION

BUREAU OF ENGINEERING

Ralph G. Wadsworth, City Engineer

FUNCTIONS OF THE BUREAU

The work of the Bureau of Engineering is primarily concerned with highways, boulevards, streets, bridges, viaducts, sewers, sewage disposal, and operation of the Richmond-Sunset sewage treatment plant and ten sewage pumping stations. In connection with all major improvements carried out by the Department of Public Works, except those relating to public buildings, the Bureau of Engineering prepares plans and specifications and supervises construction in the field. The Bureau also performs many continuing functions related to street improvements, traffic control, street name signs, spur tracks, sidewalks and structures, auxiliary water supply system, garbage disposal, surveys, subdivisions, and maintenance of maps and records for public information. A more detailed listing of these functions will be found under the heading "Organization and Duties."

GENERAL REVIEW OF YEAR'S WORKGENERAL

The bond issues for sewage treatment and street improvements approved by the voters during the year gave renewed impetus to design work in those fields. The volume of construction contracts awarded was greater than in the preceding year but had not yet reflected the results of the expanded planning program. A new type of work was started on a large scale, namely the removal of abandoned streetcar tracks and complete reconstruction of roadways. Routine office work in connection with street improvements, traffic, street signs and miscellaneous surveys and contracts continued at a high level.

SEWAGE TREATMENT BIDS

During the first half of the year the major emphasis was on the completion of plans and specifications for the North Point

Sewage Treatment Plant. Available designers and draftsmen were transferred to this work from other parts of the office and at one time a total of 92 employees was engaged on that project. The project went out for bids in January. Following rejection of the bids in March, a reduced staff proceeded with desirable modifications and corrections in anticipation of a second call for bids at some later date.

MAIN SEWER CONSTRUCTION

In the second half of the year part of the staff previously assigned to sewage treatment plans was transferred to the designing of main sewers, and one large contract was let before the end of the fiscal year and several others were nearly ready for advertising at that time.

STREET IMPROVEMENT BONDS

The Street Improvement Bonds voted by the people in November 1947 permitted the immediate undertaking of a number of highly desirable projects, and preliminary work on several of them was undertaken immediately after the result of the bond election became known. Special attention was given to the project for removing abandoned streetcar tracks and resurfacing streets for which the sum of \$10,500,000 was provided. A special unit in the Division of Streets and Highways was organized for the purpose of planning and expediting this work. Other projects provided for in the Bond Issue were developed to the point where the first steps could be taken toward the acquisition of necessary land, and the Real Estate Department was authorized to proceed with necessary negotiations. As a first move toward perfecting the plans for the proposed Broadway Tunnel, Mr. Ole Singstad, Consulting Engineer of New York, was employed to assist and consult with the Bureau of Engineering on all major features of the project, and a preliminary layout for the tunnel was agreed upon by the end of the fiscal year.

OTHER STREET WORK - The improvement of new streets in various parts of the City continued at about the same rate as during the previous

year and three short but important boulevard improvements were undertaken. For the first time in many years the raising of streets to official grade in the subsidence area was undertaken on a considerable scale. In conjunction with this program, Seventh Street was reconstructed to grade from Mission Street to Townsend Street and was widened about 10 feet by setting back the sidewalks on both sides of the roadway.

CONTRACTS AND EXPENDITURES - In spite of the deliberate retarding of all design work except the treatment plant project during the early part of the year, the total value of all contracts awarded was about \$2,984,000 as compared with approximately \$2,043,000 in the preceding fiscal year. During the year 107 contracts were awarded, 56 of them being for street improvement work under private contracts and assessment proceedings.

SPECIAL PROJECTS - The Bureau of Engineering was called upon to expand its activities to take care of the extension of the program for installing new street signs throughout the City, and the establishment of many parking meter zones. Special services were also rendered from time to time in connection with the traffic and transportation survey undertaken jointly with other City departments for the purpose of developing an over-all master plan for all forms of traffic and transportation within the City.

ORGANIZATION AND DUTIES

The plan of organization of the Bureau was changed only in a minor degree during the year. A new section to handle the track removal program was placed in the Division of Streets and Highways and the supervision of the sanitary fill and the preparation of reports thereon was transferred to the Research and Reports Section. The plan of organization as it existed on July 1, 1948 is shown on the accompanying organization chart.

The duties performed by the various divisions and sections making up the Bureau are briefly summarized in the following outline.

FUNCTIONS OF DIVISIONS AND SECTIONSDIVISION OF STREETS AND HIGHWAYS - S. P. Duckel, Asst. City Engineer

Improvement, construction and maintenance of streets and major thoroughfares.

Street Improvement Section - C. H. Stern, Engineer

Original street improvements and street and sidewalk maintenance.

Plan and Record Unit - H. L. Reinfeld, Asst. Engr.

Line and grade diagrams for street and sewer work performed under private contract and assessment proceedings.
Records of completed street work and sewer installations.

Assessment and Permit Unit - L. C. Whaley, Asst. Engr.

Permits for original street improvements and spur tracks.
Proceedings for street improvements and assessment of benefits.
Plans for sidewalk changes and street maintenance.

Miscellaneous Inspections Unit - E. E. Jordan, Asst. Engr.

Inspection of condition and use of streets and sidewalks.
Notification of parties responsible for repair or adjustment.
Recommendations on various permit applications.
Permits for street excavations and inspection of work.

Highway Section - M. D. Johnson, Asst. Engr.

Design of major thoroughfares.
Control of building permits on future rights-of-way.

Traffic Engineering and Safety Section - G. W. Purser, Engineer

Reports and recommendations on traffic devices and channelization.
Traffic surveys and records of traffic accidents.
Supervision of traffic striping and installation of traffic signs, bus stops, safety zones, and street signs.
Plans for temporary routing of traffic during construction of streets and sewers.
Reports of damages to City property caused by traffic accidents.

Track Removal Section - L. DeCew, Engineer

Plans and specifications for removal of abandoned streetcar tracks and reconstruction of streets.

Special Assignment Section - C. V. Patterson, Asst. Engr.

Project statements and records for gas tax projects.
Records of right-of-way purchases.
Assignment and expediting of correspondence within the bureau.

Transportation Planning - R. T. Shoaf, Engineer

Assistance to Transportation Technical Committee on traffic and transportation studies.

DIVISION OF DESIGN - R. H. Owens, Senior Engineer

Plans and specifications for extensions and improvements of sewers, sewage disposal plants, and auxiliary water supply system.
Structural, electrical, and mechanical plans for all projects of the bureau and occasionally other departments.
Supervision of ten sewage pumping stations.

Structural Section - N. F. Yde, Engineer

Structural plans for all major projects.
Records of surface and ground water conditions and plans for stabilizing slide areas.
Recommendations for maintenance of about 195 existing structures.

Sewer Section - R. F. Lauenstein, Engineer

Plans for extension and reconstruction of sewers and records of completed work.
Investigation and recommendations on operation and maintenance.
Review of plans for sewer systems in new subdivisions.

Sewage Disposal Section - M. Anaya, Engineer

Plans for sewage disposal plants and intercepting sewer systems.

Mechanical Section - J. Sanders, Asst. Engr.

Plans and specifications for mechanical work on all projects undertaken by the Department of Public Works, and occasionally other departments.

Electrical Section - Ivan Sandberg, Engineer

Plans and specifications for electrical work on street lighting, traffic signal and sewage and pumping station projects.
Assists in field inspection of electrical construction.
Supervision of sewage pumping stations and tests of equipment.

Auxiliary Water Supply System - W. N. Buckley, Asst. Engr.

Extensions and improvements of high and low pressure fire systems and facilities and maintenance of records.

Underground Structure Section - M. J. Callaghan, Asst. Engr.

Records of underground structures and foundation conditions.
Maps showing existing underground utilities in the vicinity of contemplated improvements.
Review of utility locations in new subdivisions.

Administrative Section - G. Galli, Engineer

Planning and coordinating of work of the Division of Design.
Assembly of plans and specifications and estimates.
Supervision of stenographic services and reference files for bureau.

Estimating Section - C. J. Geertz, Engineer

Preparation of cost estimates for contracts and change orders.
Analysis of final construction costs.

CONSTRUCTION DIVISION - C. M. Taylor, Engineer

Supervision of all construction work under jurisdiction of the bureau.

Inspection Units - various assistant engineers and junior engineers

Supervision and inspection of contract work including layout as required.

Preparation of daily, weekly, and monthly reports.

Annual inspection of structures under jurisdiction of department.

Testing Laboratory Unit - P. F. Bernard, Engineering Chemist

Physical and mechanical tests of materials used by Department of Public Works and for several other departments.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT - B. Benas, Superintendent

Operation and maintenance of treatment plant.

Studies and recommendations for improvements.

ADMINISTRATIVE SECTION - L. Glick, Engineer

Contract administration and control, including progress payments and recommendation of acceptance.

Administrative work of the bureau, including budgets, personnel, pay-roll and office services.

SURVEYS AND MAPPING SECTION - Ivan Flamm, Engineer

Field surveys for the department and occasionally for other departments and private parties.

Investigations and reports on property acquisition, street openings and closings, and streets in new subdivisions.

Maintenance of official City maps and records regarding streets.

PROGRAMS AND BUDGETS SECTION - A. V. Bowhay, Engineer

Preliminary material for annual budgets and long range programs.

Special studies of street, traffic, and transit problems.

Applications and claims for State Aid.

RESEARCH AND REPORTS SECTION - M. H. Levy, Engineer

Reports on franchises and permits.

Supervision and compiling of records on sanitary fill garbage disposal.

Supervision of progress photographs and maintenance of files.

Preparation of annual and special reports.

PERSONNEL

The number of employees in permanent positions at the end of the year was 177, as compared with 193 at the beginning of the year. This apparent loss was offset, however, by an increase in the number of persons in temporary positions which increased during the same period from 15 to 35. The total staff at the end of the year consisted of 212 employees, an over-all net gain of four since the beginning of the year.

TURNOVER

Personnel turnover was high during the year for several reasons. Many temporary employees and employees under limited tenure appointments resigned to accept other positions, and others were released following completion of the plans for the North Point Sewage Treatment Plant. As the construction program developed in the spring of 1948 it was necessary to make numerous replacements. Civil Service eligible lists for engineering positions were practically exhausted by the first of January and many temporary emergency appointments were made thereafter. Requests were sent to the Civil Service Commission for 49 certifications of permanent positions and 116 for temporary positions in addition to which a number of eligibles were supplied to fill positions previously held by limited tenure appointments.

The continuation to April 1, 1948 of the emergency in employments as declared by the Mayor with the removal of the 90-day limitation on emergency employment from various engineering classes permitted continuous employment of many emergency appointees throughout the fiscal year; otherwise the turnover of employees would have been larger.

PERSONNEL DISTRIBUTION

The following tabulation shows the personnel of the Bureau at the beginning and end of the fiscal year according to major functions.

Personnel at Beginning and End of Fiscal Year

<u>Division and Grade</u>	<u>July 1, 1947</u>	<u>June 30, 1948</u>
<u>Engineering Design and Administrative Divisions</u>		
City Engineer	1	1
Assistant City Engineer	1	1
Senior Engineer	1	1
Engineer	8	14
Assistant Engineer II	33	24
Assistant Engineer I	1	6
Junior Engineer	6	6
Inspector Public Works Construction	2	3
Senior Draftsman	20	9
Draftsman	25	20
Junior Draftsman	5	3
Cartographer	1	1
Sub-total	104	89
<u>Construction Division - (Field)</u>		
Engineer	1	1
Assistant Engineer II	7	3
Assistant Engineer I	1	3
Junior Engineer	16	16
Inspector Public Works Construction	1	2
Engineering Chemist	1	1
Sub-total	27	26
<u>Survey Division (Field & Office)</u>		
Engineer	1	1
Assistant Engineer II	1	1
Assistant Engineer I	0	1
Junior Engineer	4	3
Senior Draftsman	1	1
Chief of Party	4	4
Instrument Man	4	4
Surveyors Field Assistant	8	6
Sub-total	23	21
<u>Clerical Staff</u>		
Clerks	4	6
Stenographers & Typists	12	11
Office Assistant	0	1
Sub-total	16	18
<u>Plant Operation Force</u>		
Sewage Treatment Plant	16	16
Pumping Stations	7	7
Sub-total	23	23
TOTAL - Permanent Employments	193	177
Temporary Employments	15	35
GRAND TOTAL	208	212

PERSONNEL LOSSES

Through retirement, or death, the Bureau lost the valued services of the following employees during the year:

<u>Name</u>	<u>Classification</u>	<u>Length of City Service</u>
Through retirement:		
Emil E. McCartney	Inspector Public Works Construction	40 years
Thomas F. Prendergast	Head Clerk	34 years
Aloysius P. Mallon	Junior Engineer	35 years
Through death:		
John O. Hanson	Assistant Engineer II	36 years

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CURRENT CONTRACT DATA

The following tabulation shows the number of contracts and their aggregate value awarded during the fiscal year 1947-1948 in each of the main categories of construction work. The tabulation also shows in the last column the total value of the construction work actually performed by contractors on the contracts which were active during the year. From this tabulation it will be noted that 107 contracts were awarded having an aggregate value of \$2,983,833.56, and that the value of the work actually performed on contracts under way was \$2,858,874.97.

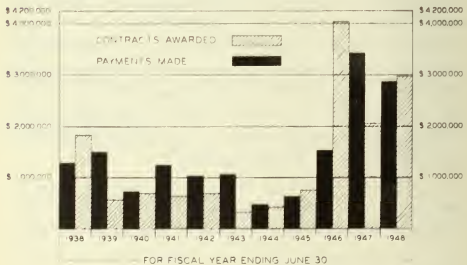
A detailed listing of the contracts under way during the year will be found in Appendix I. A separate tabulation is given for each of the categories of construction work, the various tables being designated by the letters and figures shown in the first column of the following table.

SUMMARY

Table	Type of Construction	No.	Contracts Awarded 1947 - 1948	Amount Expended during Fiscal Year 1947-1948
			Aggregate Value	
A	Major Thoroughfares	4	\$ 495,753.98	\$ 246,027.48
B-1	Streets - Private			
	Contracts	34	441,155.00	609,760.00
B-2	Streets - Assessment			
	Proceedings	22	209,070.85	288,281.42
B-3	Streets - Public			
	Contracts, City Pay	12	405,378.93	264,469.84
B-4	Streetcar Track			
	Removal	6	799,944.84	257,263.64
C	Traffic Signals and			
	Channelization	10	150,681.15	157,684.86
D-1	Severs - Pipe, Vitri-			
	fied Clay & Concrete	2	290,745.55	176,233.75
D-2	Severs - Concrete			
	(Monolithic)	1	70,700.00	355,450.00
E	Miscellaneous	16	120,403.26	503,703.98
TOTALS - Awarded and expended 1947-1948			107 \$2,983,833.56	\$2,858,874.97

The accompanying chart indicates graphically the value of contracts awarded and the value of work done on construction projects supervised by the Bureau during the past 10 years.

CONTRACTS AWARDED - PAYMENTS MADE
1938 - 1948



STREETS AND HIGHWAYSSTREET FUNDS

Two important events took place during the past year which greatly increased the backlog of work to be performed on the streets and highways of San Francisco. The first was the approval by the voters in November 1947 of a Street Improvement Bond Issue in the amount of \$22,850,000. Of this amount, \$10,500,000 was provided for the removal of abandoned streetcar tracks and the reconstruction of the streets which they occupy. The balance is available for major street and thoroughfare projects, including the following:

Broadway Tunnel, Mason St. to Larkin St.
Bryant Street Viaduct, easterly from Second St.
Gough Street Extension, from Market St. to Otis St.
Seventh Street Extension, from Market St. to McAllister St.
Post-Geary Street, diagonal from Divisadero to Broderick St.
Thirteenth Street, Mission St. to Bryant St.
Improvement of the gore corner of Oak and Market Sts.
Installation of modern 3-light traffic signals on numerous thoroughfares

The second outstanding event was the inauguration on July 1, 1947 of new gasoline taxes under the Collier-Burns Highway Act. San Francisco's annual allotment of gasoline tax funds for expenditure on Primary County Roads will be increased from about \$800,000 to more than \$2,000,000. (See Appendix VII for method of apportioning State motor vehicle funds).

PLANNING

During the last half of the fiscal year design work was actively prosecuted on the projects included in the November bond issue, as well as several of the major street improvement projects to be financed with gas tax funds.

Broadway Tunnel

Preliminary studies were undertaken with the assistance of Ole Singstad, Consulting Engineer of New York City and, by the end of the fiscal year, decisions had been reached as to the cross-section of the tunnel, portal layouts, and the roadway profile. As



Islais Creek Bridge (built in 1915)
To be replaced

planned, the project will extend from a point midway between Polk Street and Larkin Street on the west to a point about mid-way between Mason and Powell Streets on the east. The west portal will be located 118 feet east of Hyde Street and the east portal will be 120 feet west of Mason Street. The level of Mason Street will be raised about 8 feet in order to give the necessary clearance at the point where it crosses over the tunnel approach cut. The length of the tunnel, portal to portal, will be 1,616 feet and the maximum grade will be 3%.

Twin bores will be constructed about 35 feet apart. Each bore will be 28' 6" wide and will have a clear height of 22' 3½" at the center of the circular arch lining. Each bore will carry two 11-ft. roadways and one 4-ft. sidewalk.

Anza Street Widening

During the winter a series of test borings were made along the southerly line of Anza Street where the street area is partly covered by the slope of Lone Mountain. About 960 feet of test holes were driven and 667 feet of 2-inch pipe were installed in certain of the holes in order to serve as permanent relief drains for the underlying formations. Studies of the boring results, made by Hyde Forbes, Consulting Geologist, indicate that the slope of the mountain can safely be cut back to provide for the required street widening with reasonable side slopes, if a suitable drainage system is provided. Plans are rapidly proceeding along the lines of his recommendations with a view to undertaking the street widening project in the near future.

Islais Creek Bridge

The plans for the Islais Creek Bridge, prepared in 1945 by the late L. H. Nishkian, Consulting Engineer, were carefully reviewed in the light of recent surveys and information, and minor modifications were made preliminary to the award of a contract. Mr. L. H. Marchand, Consulting Engineer, was employed to advise on

the plan revisions, particularly as to pile spacing, and later to supervise construction. The bridge will have a 100-ft. clear opening for navigation, as compared with the 75-ft. opening provided by the present bridge. The deck will provide 6 lanes for vehicular traffic as compared with the present 4 lanes. The structure will be of the double bascule type with bearings and counter weights located below the roadway level.

SUMMARY OF STREET CONSTRUCTION WORK 1947-1948

All street construction and reconstruction contracts started or carried on during the year are listed in detail in Appendix I, Tables A, B-1, B-2, B-3 and B-4. Tables B-1 and B-2 include new street construction performed at the expense of adjoining property owners, in some cases with a limited amount of City aid. Table B-1 covers the street improvement projects performed under contract negotiated directly between the property owners and a contractor, the City's only function being to grant permits, furnish the plans and inspect construction work. Table B-2 covers the same type of work performed under contracts awarded by the City, the cost being assessed to the property owners. Street work paid for entirely by the City is listed in Table B-3, some of the projects being new street improvements in front of City-owned property. The remainder of the contracts in this table, together with the major thoroughfares and track removal jobs contained in Tables A and B-4, are improvements undertaken by the City for general public benefit.

It will be noted that 78 contracts were awarded for street work, having an aggregate value of \$2,351,303.60. New street improvements paid for by property owners account for 56 of the 78 contracts and for \$650,225.85 of the total value of the work done. As compared with last year, the number of contracts awarded was 6% less but the total value of the work was 117% greater. The increase in value is accounted for in large measure by the inauguration of the track removal program.

MAJOR THOROUGHFARES

Previous Year's Projects Completed

Five important contracts started during the preceding year were completed during the past year, namely: Clipper Street extension from Portola Drive to Douglass Street; Guerrero Street widening from 14th Street to Army Street; the repaving of Alemany Boulevard easterly from Mission Street; the seal coat on Sunset Boulevard; and the Evans Avenue bridge at Army Street. Descriptions of these projects are contained in the Annual Report for the year ending June 30, 1947. Details as to dates and costs will be found in Table A of Appendix I, except in the case of the Evans Avenue bridge which is listed in Table E.

Geneva Avenue Extension

Geneva Avenue between Mission Street and Alemany Boulevard was widened from 60 feet to 90 feet, and realigned at the Mission Street end so as to eliminate the sharp turns formerly required. The project is 520 feet in length and has two 10-ft. sidewalks, two 8-ft. parking lanes, and two 25-ft. roadways separated by an island four feet wide. The pavement consists of a 6-inch concrete base and a 2-inch asphaltic concrete wearing surface. The parking lanes are concrete, eight inches thick. The contract was awarded on October 8, 1947, and completed on March 12, 1948, at a cost of \$42,237.32.

Army Street Widening

A contract was awarded on May 28, 1948 for the widening of Army Street between Harrison Street and South Van Ness Avenue, this being a portion of the Army Street project which extends from Potrero Avenue to Guerrero Street. The portion between Potrero Avenue and Harrison Street was paved several years ago. The necessary right-of-way has been acquired and funds are available to complete the entire project, but because of the continuing housing



Old Evans Avenue Bridge



New Evans Avenue Bridge

shortage, construction of the remainder of the project has been deferred.

The street will be widened from 64 feet to 100 feet providing two 38-ft. roadways separated by a medial strip 4 feet wide. Work has not yet been started on the contract which amounts to \$137,833.00.

Sunset Boulevard, Seal Coat (2d Contract)

The portion of Sunset Boulevard between Sloat Boulevard and Skyline Boulevard was given an emulsified asphalt seal coat at a contract cost of \$5,378.13. The work was performed in the same manner as the first contract, which was described on p. 54 of the Annual Report for the fiscal year ending June 30, 1947.

Great Highway, Seal Coat

The Great Highway, adjacent to the Pacific Ocean, is two miles long and consists of two roadways separated by a planted area 25 feet wide. The pavement, constructed about 18 years ago, consists of a 10-inch macadam base and a $2\frac{1}{2}$ -inch asphaltic concrete wearing surface. Although commercial vehicles are not permitted to use this highway, the wearing surface in recent years became badly cracked permitting water to enter the macadam base. To prevent this infiltration, a seal coat was placed over the entire surface of both roadways consisting of two applications of emulsified asphalt followed by applications of crushed screening, producing a mat approximately $\frac{3}{4}$ inch in thickness. The contract amounting to \$17,064.96 was awarded April 23, 1948.

Geary Boulevard

A contract was awarded on July 16, 1947 for widening Geary Boulevard between Masonic Avenue and Broderick Street, a distance of 2,200 feet along the northerly side of the Anzavista Subdivision, formerly known as Calvary Cemetery. The boulevard will be widened



Clara Street - Subsidence area
Extreme high tide



Folsom Street, west of Second Street
After track removal

56.25 feet on the southerly side providing a width of 181.25 feet between property lines from Masonic Avenue to Presidio Avenue, and 125 feet from Presidio Avenue to Broderick Street.

The existing street railway tracks will be moved 28.13 feet southerly to the center line of the 25-ft. right-of-way. When completed the boulevard will have two 12-ft. sidewalks, two 8-ft. parking lanes, and two 40.50 ft. roadways separated by a medial strip four feet wide. The contract amounting to \$298,618.70 is 25% complete.

ROADWAY RECONSTRUCTION

Two of the important street reconstruction projects undertaken were the resurfacing of Pine Street and the restoration of certain streets in the South of Market Street subsidence area.

Pine Street

Pine Street between Kearny Street and Stockton Street had been resurfaced about 20 years ago by the construction of finished concrete sides 5 feet in width and a vitrified brick center strip 20 feet 9 inches in width. With years of use the brick became highly polished and slippery and as the grades of the two blocks were 15.7% and 14.5% the surface became very dangerous when wet. Several methods for correcting this condition had been tried including application of an asphalt armor coat and roughening of the brick surface but none of them proved successful. The recent contract, awarded on November 14, 1947, provided for complete removal of the brick wearing surface and replacement with a finished concrete pavement 5 inches thick over the existing concrete base. The improvement has removed all cause for complaint. The contract cost was \$11,563.17.

Subsidence Streets - Contract No. 1

Six streets in the South of Market area as listed in Table B-3 of Appendix I had subsided to such an extent that the sewers

serving them were below the main collecting sewers and therefore did not properly function. On two of the streets, Shipley Street and Clara Street east of 6th Street, the roadways and the properties adjacent to them were nearly six feet below official grade and during high tides or heavy rains sewage backed up enough to cover considerable areas. On May 7, 1948, a contract was awarded for the complete reconstruction of these streets including construction of new sewers, restoration of the roadway to grade, asphaltic concrete pavement, and concrete curbs. The owners of property on these streets are required at their own expense to protect their buildings, and in many cases raise the plumbing in them to obtain drainage into the new sewers. The contract is about 29% complete and is estimated to cost \$187,898.00.

STREET WIDENING PROJECTS

Three important street widening projects were completed, one requiring the purchase of additional property and the other two involving only the setting back of curbs.

Presidio Avenue

Presidio Avenue between California Street and Post Street, a distance of four blocks, was widened from 68 feet 9 inches to 80 feet by acquiring a strip of land 11 feet 3 inches wide along the westerly side of the street. A concrete sidewalk with concrete curb was constructed along the new property line. A concrete parking lane 8 feet in width and asphaltic-concrete pavement completed the roadway. The widening of this street was made necessary by the opening of Euclid Avenue through Laurel Heights Subdivision. The contract cost was \$24,724.66.

Powell Street

Powell Street was widened from California Street to Broadway by reducing sidewalks from 12 feet to 9 feet under a contract



Sacramento Street, west of Gough
Before and after track removal

completed on December 4, 1947. The work called for the construction of concrete parking lanes 6 feet wide and the resurfacing of the roadway except in the area occupied by cable car tracks. Existing granite curbing was reset. At about the same time, the same portion of Powell Street was declared an underground district and all overhead wires are being placed underground by the utility companies. The contract cost of the street work was \$42,134.39.

Seventh Street

The contract for the improvement of Seventh Street between Townsend Street and Mission Street was completed on March 4, 1948. The work provided for the reduction of the sidewalk width from 15 feet to 10 feet and the widening of the roadway. Two concrete parking lanes 6½ feet wide were constructed with new unarmored concrete curbs. The entire width of roadway was resurfaced with asphaltic concrete pavement. This portion of Seventh Street is almost entirely within a subsidence area and had settled from 2 inches to 36 inches below official grade in the past 21 years, necessitating the complete reconstruction of the base. This was done by compacting a "red rock" fill over the existing pavement. The raising of the street made it necessary for property owners to raise their buildings along the street or to protect them by the construction of retaining walls. The contract cost for the street work was \$110,458.92.

REMOVAL OF STREETCAR TRACKS AND ROADWAY RECONSTRUCTION

Sacramento Street

The removal of the cable car tracks from Sacramento Street between Van Ness Avenue and Gough Street, awarded during the preceding year, was completed on July 16, 1947. A detailed description of the work performed appears on p. 59 of the Annual Report for 1946-1947. The contract cost was \$16,902.17.

Sansome Street

A contract for the removal of streetcar tracks from Sansome Street between Bush Street and Chestnut Street was awarded on December 10, 1947 and completed March 31, 1948. Wooden ties were left in the roadway except on the two blocks between Jackson Street and Broadway. Concrete gutters two feet wide were constructed and the roadway surfaced with asphaltic concrete for its full width from Bush Street to Broadway. From Broadway to Chestnut Street a 2-inch asphaltic concrete wearing surface was applied over the 20-foot track area. The contract cost was \$79,843.64.

Other Track Removal Contracts

Three additional track removal contracts have been awarded and work is now in various stages of completion on the following streets:

Polsom Street from 3d St. to The Embarcadero and Mission St.
Sacramento St., cable car tracks from Van Ness Avenue to
Market Street, including the branch line on Larkin St.
to Clay St.

Kearny Street, from Market Street to Broadway

The work involves the removal of all wooden ties on the trolley lines, the removal of all cable car tracks and appurtenances to three inches below pavement subgrade, and the general resurfacing and reconstruction of the roadways. The total estimated cost of the three contracts is \$303,893.70.

In addition to the above, two contracts were awarded for the removal of streetcar tracks and the roadway reconstruction of:

Polk Street, from Post St. to North Point St.
McAllister Street, from Market St. to Central Ave.
and Fulton St. from Masonic Ave. to Stanyan St.

These contracts require that all ties be removed and the full width of roadways be reconstructed. The total estimated cost of the two contracts is \$416,207.50.

STREET IMPROVEMENTS FINANCED BY PROPERTY OWNERS

New street improvement work was at a somewhat lower level

than during the preceding year. The total number of contracts authorized or awarded was 22% less and the value of the work authorized was 20% less. The reduction, however, was entirely in the work performed under permits granted. In fact, there was a slight increase in the number of contracts and the total value of work which was undertaken under assessment proceedings.

A complete list of the new street improvements performed during the year is shown in Tables B-1 and B-2 of Appendix I. The following tabulations indicate the volume of office activities carried on during the year in connection with street improvement procedures:

Assessments and Bonds

Assessments issued for cost of street work..	35
Cost of street improvements covered by assessments issued.....	\$251,580.29
Receipts for bond payments issued	26
Amount of bond payments collected	\$ 936.15

Street Work Proceedings

Resolutions of Intention passed	25
Street Improvement Projects recommended to the Board of Supervisors	20
Notice of Street Improvement posted	1,066
Notices of Resolution of Intention mailed ..	697
Ordinances ordering performance of street improvements passed	22
Proposals for street improvements published ..	26
Awards of Contract for street improvements..	23
Notices of Recordation posted	340
Notices of Recordation mailed	600
Private contracts granted	34

STREET AND SIDEWALK PERMITS AND INSPECTIONS

The following tabulations indicate the variety of miscellaneous inspections made during the year:

Permits and Fees for Corporation Excavations

<u>Company</u>	<u>Number Permits</u>	<u>Lin. Ft.</u>	<u>Fees</u>
Pacific Gas & Electric Co.	3,276	133,582	\$5,701.00
Pacific Telephone & Telegraph Co.	442	49,283	816.00
San Francisco Water Department	3,735	6,639	5,153.40
	7,453	189,504	\$11,670.40

<u>Special Permits</u>	<u>Number</u>	<u>Fees</u>
Oil Tanks	35	\$ 78.00
Curb Lowering	1,156	4,968.00
Street Space	1,583	40,686.45
House Moving	66	1,024.00

Notices, Permits, and Investigations

Notices to construct or repair sidewalks	3,132
Notices to construct bulkheads	20
Notices to remove obstructions	133
Notices to obtain curb lowering permits	4
Curb lowering permits approved	81
Notices to construct guard rails	6
Notices to obtain oil tank permits	5
Notices to replace side sewer covers	251
Notices to obtain street space permits	75
Street space permits reported on	2,497
Oil tanks permits reported on	54
House moving permits reported on	72
Miscellaneous calls and complaints	6,355
Blasting bonds set	12
Curb lowering permits reported on	541
Defects in pavement reported	917
Damage signs reported	39
Excavation permits approved	6,847
Notices posted for improvements	949
Citations for not complying with requests	21
Total Notices, Permits & Investigations	22,011

Flower Stands

In addition to the inspections listed above, regular inspections are made of the sidewalk flower stands to see that owners keep their wares within the space allotted and also to enforce cleanliness in and about the stands.



TRAFFIC CONTROL DEVICESTRAFFIC SIGNALS

The program for installing modern traffic signals was given special attention during the year, particularly after the passage of the Street Improvement Bonds in November, which included for new traffic signals the sum of \$2,736,000. It is expected that this amount, augmented by Gas Tax Funds, will be spent over a period of four or five years.

One installation of modern signals was completed during the past year, bringing the total length of signalized thoroughfares to seven miles. Other contracts were awarded which will add another six miles to the system. A list of traffic signal projects under way during the year will be found in Table C of Appendix I.

Bayshore Boulevard

Signals were installed on Bayshore Boulevard from the County Line northward to the intersection with Third Street. The system consists of installations at six intersections, three of them being traffic actuated. The traffic actuated signals were coordinated with the system in such a manner that progression on the main route will not be disturbed by cross traffic at these intersections. The work was completed on March 31, 1948 at a total cost of \$71,172, and the system was put in final operation on the same day.

Other Contracts Awarded

A contract was awarded for the installation of modern signals on the major highway routes through the center of the City comprising Van Ness Avenue, Fell Street, 10th Street, and Potrero Avenue. This system will cover 53 intersections extending from Bay Street on the north to Army Street on the south, and will cost about \$175,000. The equipment was purchased by the City last year. Installation work is expected to be finished in November of this year.

A second major contract awarded in February 1948 provides for signalizing 11 important intersections on Third Street, extending from Bayshore Boulevard northerly to Custer Avenue just south of the Islais Creek Channel. The contract provides for the furnishing of material as well as the installation, and amounts to \$28,317. About 37% of the work was completed at the end of the fiscal year.

Miscellaneous Intersections

Signals were installed at two isolated intersections during the year and were placed in operation on the dates shown below:

<u>Intersection</u>	<u>Placed in Operation</u>	<u>Cost</u>
Alemaný Blvd. at Ocean Ave.	Dec. 3, 1947	\$4,682.00
16th and Guerrero Sts.	Dec. 11, 1947	2,007.00

Contracts were awarded providing for installations at five other intersections, but work has not yet been started.

CHANNELIZATION

Two channelization projects begun during the preceding year were completed. The first was on Bayshore Boulevard from the County Line northward to Third Street, the work being done in conjunction with the installation of traffic signals previously described. The boulevard was provided with a 14-ft. center dividing strip with left-turn harbors at six intersections, and 14 double pendant traffic safety lights. The second contract was on Third Street running northerly from Bayshore Boulevard to Custer Avenue, the work including the installation of a 4-ft. center island, conduits and foundations for a new street lighting system, and also the resurfacing of the street, the total cost being \$88,842.

Channelization of St. Francis Circle, as described briefly in the previous annual report, was started on July 2, 1947 and completed on September 18, 1947.

TRAFFIC STRIPING

During the fiscal year, 83.9 miles of streets were striped for traffic and 1348 intersections were painted with cross-walks for pedestrians. The quantities of work performed by the Bureau of Streets under the supervision of the Bureau of Engineering were as follows:

Traffic stripes painted	224.8 miles
Pedestrian cross-walks (12-in. stripes)	594,617 lin. ft.
Lettered signs on pavement	5,716 words

The work was all done by City forces at a total cost of \$85,764.96.

TRAFFIC SIGNS

During the year a total of 2,231 traffic signs of various types were installed at a total cost of \$14,174. Determination as to the installation of signs was made by the Police Department, frequently on the advice or recommendation of the Bureau of Engineering. The latter bureau supervised the field work most of which was performed by the California State Automobile Association under a continuing contract with the City.

PARKING METERS

San Francisco's first parking meters were installed in the Polk Street business district where 551 meters went into operation on September 2, 1947. The reaction of the general public as well as the local merchants was immediately favorable and the Police Commission has subsequently authorized seven additional parking meter zones in various parts of the City.

The Traffic and Safety Section has made all of the necessary surveys and has supervised the marking of the parking meter stalls. By the end of the fiscal year, 1864 meters were in place and the the City Purchasing Department had called for bids for an additional 5,000 meters. All of the parking meters have been purchased from the McGee-Hall Park-O Meter Company of Oklahoma City on open competitive bids.

STREET SIGNS

The new type street signs which were installed on a limited basis during the preceding fiscal year met with official and popular approval and a program was developed for completing the installation throughout the City in a period of about four years. The signs are 7" wide by 33" long with 4-inch embossed black letters on a white porcelain enamel background. Installed above each name plate is a block number plate 5" x 12" showing the block number at the intersection and the direction in which the street numbers are increasing. Four plates of each type are required for each assembly.

Progress to July 1, 1948

By the end of the fiscal year, 19,430 plates, including both types, had been ordered out of a probable total requirement of 40,000. A major installation contract is under way involving 1270 signs which will bring the total installed to 1535. This contract should be completed by October 1, 1948, by which time the area provided with signs will include the northwesterly part of the City lying west of Van Ness Avenue and north of Golden Gate Park and Duboce Avenue. Signs will also be in place along 10th Street, Potrero Avenue, a portion of Army Street, and the streets within the Apparel City Subdivision.

Costs

Up to July 1, 1948, funds had been made available in a total amount of \$100,000 for the new street signs, and the total amount expended or encumbered was approximately \$70,600.

On the basis of the June 1948 order placed for plates, the cost of the eight plates making up one head assembly is \$12.64. Bronze fittings for making up the assembly, purchased by the City under a general contract, cost \$4.62 for each head. The last installation contract, dated June 1948, called for the payment of

\$9.00 each for installation of signs where existing pipe support could be used, and \$19.90 where a new pipe support must be furnished. In most cases existing pipes can be used but it is found that many of them must be relocated to provide better visibility or to provide for necessary clearance from the curb line.

TRAFFIC INVESTIGATIONS AND STUDIES

VEHICULAR TRAFFIC COUNTS

Eighteen traffic counts were taken at various locations, involving 454 hours of field work. Most of the counts were in connection with the planning of traffic signals which required specific information as to volumes of cross traffic. Such counts were particularly necessary in connection with the design of the Van Ness Avenue signal system.

CLIPPER STREET SURVEY

Just after the close of the fiscal year, i.e. on July 15, 1948, a recheck on the traffic using the Clipper Street Extension was made for the purpose of appraising changes which had taken place in the first year after opening of the street. Reference was made to the initial counts, made immediately after the opening of the street, in the previous annual report (page 70).

The survey showed that traffic on Clipper Street had increased 44% during the year, indicating that its value is being discovered by more and more motorists. In spite of the increasing traffic leaving or entering Portola Drive by way of Clipper Street, there has been no reduction in the volume of traffic on Portola Drive and upper Market Street east of the Clipper Street intersection.

PEDESTRIAN COUNT - POST STREET

On December 17, 1947, a count of pedestrians was taken on

Post Street during the noon and evening rush periods to measure the use being made of the sidewalks in the two blocks from Powell Street to Taylor Street. The purpose of the count was to determine whether the sidewalk widths could safely be reduced in order to permit widening of the roadway for vehicular traffic.

The counts showed that the heaviest pedestrian volume was on the north side of Post Street between Powell and Mason Streets where 713 pedestrians were counted in the half-hour period from 5:00 to 5:30 p.m. The width of the sidewalk in this block is 12 feet. On a sidewalk of the same width on Montgomery Street between Sutter and Bush Streets counts previously taken indicated that over 1600 pedestrians were accommodated in a single half-hour period.

MISCELLANEOUS INVESTIGATIONS

The Traffic and Safety Section of the Division of Streets and Highways investigated numerous requests and recommendations for improvement of traffic conditions. A total of 454 reports was addressed to the Police Department and an additional 267 letters were written to other departments and to private citizens. Most of these reports involved matters having to do with stop signs, traffic signals, loading zones, traffic striping, pedestrian crosswalks, one-way streets, and other problems pertaining to traffic engineering.

All police accident reports were reviewed to determine whether City property had been damaged, and in 203 cases letters were written to responsible motorists demanding payment in the aggregate amount of approximately \$3,600.

TRAFFIC AND TRANSPORTATION SURVEY

In October 1947 the Technical Committee, consisting of the heads of four major City departments, commenced work on the development of a comprehensive long-range transportation plan which will embrace all phases of circulation within the City. Plans will

eventually be prepared for mass transit, freeways and other thoroughfares, terminals and parking facilities. Initial work is being done by two consultants, De Leuw, Cather & Company, Transportation Engineers, and Ladislas Segoe, Consulting City Planner.

The Bureau of Engineering has participated in the surveys and planning by assigning a traffic engineer continuously to the work and by contributing additional staff from time to time when required for special surveys and office studies. Contributions made to some of the important activities were as follows:

Cordon Count of Metropolitan Traffic District	65	men	days
Inventory of curb parking spaces	180	"	"
Survey of streetcar loading	16	"	"
Traffic volume checks at downtown intersections	76	"	"
Survey of volume of through traffic	20	"	"
Survey of off-street parking facilities	8	"	"
Office work on assignment of traffic to freeways	10	"	"
Total	375	"	"

DAMAGE CLAIMS

The Bureau of Engineering investigated 56 damage claims, filed during the year against the City, based on accidents occurring on streets and sidewalks. Many of the reported accidents were found to be the responsibility of contractors, the public utility companies or City-owned utilities. The remainder, embracing 37 separate claims, were based on alleged defects in streets or sidewalks which might be chargeable to the Department of Public Works if negligence in making repairs could be shown. In each case a report was made to the Director of the Department, accompanied by photographs when appropriate.

In the fall of 1947, a claim summary was prepared for the Director and the City Attorney, showing all claims filed or active during the 5-year period ending June 30, 1947. In addition to the personal injury or damage claims of the type mentioned above, the summary also included damage claims resulting from motor vehicle accidents in which Department of Public Works' vehicles were involved.

The following significant figures are taken from the summary:

Claims filed 5-year period		338
Claims and suits settled	103	
Claims outlawed (no suits filed)	<u>95</u>	<u>198</u>
Suits pending, June 30, 1947	50	
Claims pending, June 30, 1947	<u>90</u>	<u>140</u>
Suits filed prior to 5-year period and still pending		<u>10</u>
TOTAL suits and claims pending		150

The 103 claims and suits which were settled demanded damages aggregating \$303,950. The amount paid by the City was \$25,069.

SEWERS

Sewer construction work was deliberately retarded during the first eight months of the fiscal year. The purpose was to permit the concentration of all available designers on the preparation of plans for the North Point Sewage Treatment Plant and also to conserve available funds for use in financing that project. Following the rejection of bids for the treatment plant work in March 1948, primary attention was shifted to sewers, and three contracts were awarded by July 1. In addition, plans and specifications for a number of others were rushed to completion. Normal work during the year included the planning of many sewer installations in connection with various street widening and reconstruction projects as well as numerous investigations and studies.

PIPE SEWERS

The pipe sewer contracts awarded and under way during the year are shown in Table D-1 of Appendix I. One major job was awarded using precast concrete pipe, and one small but important job was awarded using vitrified clay pipe.

Scott Street Sewer System - Section E

The project is an extension at the upper end of the Scott Street Sewer Section BC-AD, described in the previous annual report

(p. 75) and completed early in 1947. It will complete the present required construction of the Scott Street Sewer System from 17th Street and Treat Avenue to Divisadero and Fell Streets. Section E starts at the intersection of Steiner and Waller Streets and runs northwesterly along Waller, Pierce, Page, Scott, and Fell Streets to a point on Fell Street one-half block west of Divisadero Street.

The sewer will be constructed entirely of centrifugally spun reinforced concrete pipe including 2690 ft. of 6'-9" diameter, 240 ft. of 5'-6", 80 ft. of 4'-6" and 4'-3" and 300 ft. of smaller pipe sewers. It is a combined storm and sanitary sewer, replacing the present inadequate and worn brick sewers.

Bids on this project were received on both precast pipe and monolithic construction. The contract was awarded on the basis of the precast pipe at a cost of \$284,562 which was approximately \$20,000 less than the lowest bid received for monolithic construction.

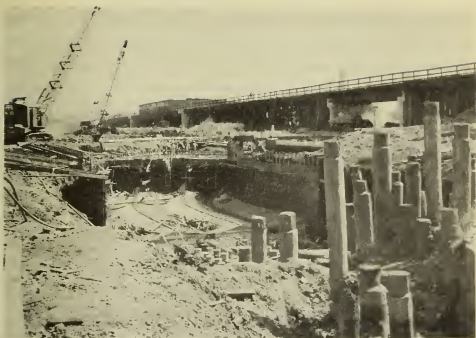
Outlet Sewer - 12th Ave. and Quintara St.

The existing sewer in 12th Avenue, between Quintara and Rivera Sts., discharges midway in the block westerly into a sand and gravel pit with no free outlet. As the end of the sewer was frequently clogged, storm water backed up on 12th Avenue and flowed over the curb at the low point near the middle of the block and thence down a ravine, causing an unsanitary condition and adding to the natural run-off which deposited silt on private property.

The new sewer, an 18" vitrified clay pipe, will provide a new connection from the low point of the sewer in 12th Avenue to the existing sewer in Quintara Street at a point west of 12th Avenue, thus confining all sanitary sewage within the sewers and preventing street drainage from flowing down the ravine westerly onto private property.

MONOLITHIC CONCRETE SEWERS

As shown in Table D-2 of Appendix I, only one small monolithic



Alemany Sewer, Section G
3 compartments, each 7'6" x 10'



6'9" centrifugally spun reinforced concrete pipe
for use in Scott Street Sewer, Section E

sewer job was awarded during the year. Two others, started previously, were completed, and work was continued on the outfall sewer at Islais Creek at the lower end of the Alemany system. This large, 3-compartment sewer, originally scheduled for completion in March 1948, was still under way on July 1, 1948, 93% of the work being then completed. Construction of this sewer was prolonged partly by delay in securing the proper length of piles for the foundation and partly by the addition of a diversion structure after the contract work had started.

21st, Florida and 20th Sts. Sewer

This project is a new arterial sewer consisting of 1060 feet of 3'-0" x 4'-6" and 2'-6" x 3'-9" egg-shaped reinforced concrete sewers and 850 feet of vitrified clay pipe 18" to 24" diameter, the latter size being placed on reinforced concrete foundation. The sewer is a combined storm and sanitary sewer. It was constructed to relieve flooding in this vicinity, particularly at 21st and Bryant Streets, 21st and Florida Streets, and 20th and York Streets, and to replace an old sewer which had settled and shifted out of alignment.

PLANS UNDER WAY

In the spring of 1948, planning was expedited on the outlet tunnel of the Lake Merced System and the first two sections of the Lake Street System. The tunnel is Section D of the Lake Merced Sewer System which will pass under Fort Funston to an outlet at the ocean beach. Section A of the Lake Street System runs through the southwesterly corner of the Presidio giving a new storm outfall into the ocean at the mouth of Lobos Creek. In both cases necessary easements were secured from the Department of the Army after somewhat prolonged negotiations.

Plans were also prepared for sewer installations in a number of street projects to be undertaken in the near future including

Anza Street widening, 7th Street Extension across Market Street, 13th Street Widening and the restoration to grade of a number of streets in the subsidence area south of Market Street.

USE OF REINFORCED CONCRETE PIPE

Reinforced concrete pipe, manufactured by the centrifugally spun method, has been used in several sewer contracts in recent years due to savings in cost and installation time as compared with monolithic concrete sewers. The installation of the reinforced concrete pipe has presented no difficulty or problem where there were no side sewers to be connected to the pipe in the field, as in storm overflow lines, or in new sewer lines in unoccupied areas where openings for side sewers could be precast in the pipe.

With the cooperation of one of the leading pipe manufacturers, a series of tests was arranged to assist in determining the suitability of the precast pipe in cases where numerous openings for side sewers must necessarily be cut in the field. Several sections of 30" reinforced pipe were tested in compression. Some had precast holes through the wall and others had holes cut subsequent to casting and curing. All of the holes were $11\frac{1}{2}$ inches in diameter. The tests indicated that the pipe had the same strength whether the holes were formed or cut; furthermore that there was no measurable difference in strength between pipes having holes through the wall and pipes without holes. Based on these tests and other studies, the precast pipe was specified for the Scott Street Sewer, Section E, previously described, with a view to economy and with the idea of definitely determining what difficulties may arise on the job in placing this type of pipe and making the necessary field connections.

STUDIES OF YERBA BUENA SEWERAGE DISTRICT

A number of studies were made of revisions of the sewer system in the Yerba Buena District which lies, in general, north of

Market Street and east of Sansome Street. Sewers in this area are in need of rehabilitation and a system of interceptors and pumping units will be required to collect or divert the sanitary flow to the new North Point Treatment Plant. Consideration was given to the possible advantages of constructing a separate sanitary system in the area, but the conclusion was reached that the present system of combined sewers with certain improvements and diversion structures could be used in a satisfactory manner and at much less cost than would be involved in the construction of a separate system.

ROUTINE INVESTIGATIONS

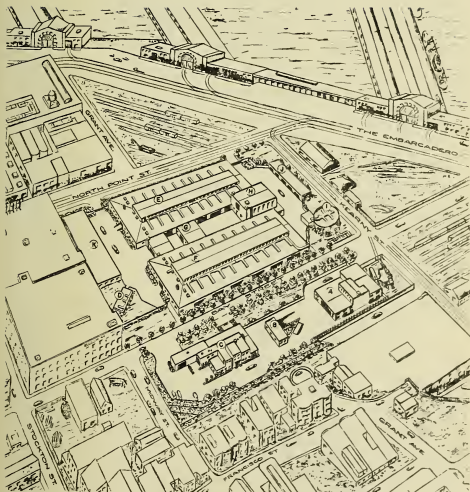
The Sewer Section of the Division of Design handled numerous routine matters during the year including the following:

Review of sewer plans for new subdivisions	5
Investigation of sewer complaints	11
Investigation of sewer easements	5
Miscellaneous investigations	20
Sewer studies in connection with street closings	14
Sewer adjustments in connection with spur tracks	2

21st Street between
Florida and Alabama Sts.

2'6" x 3'9" rein-
forced concrete sewer
showing lagging, invert
poured, and steel for
sides and top. Tar
paper is used so as to
aid in pulling the lag-
ging.





NORTH POINT SEWAGE TREATMENT PLANT BAY ST. AND GRANT AVE.

A- Pre-Treatment Building, B- Gate House, C- Administration Building, D- Receiving Structure, E- Pre-Aeration & Sedimentation Building No. 1, F- Pre-Aeration & Sedimentation Building No. 2, G- Grease & Scum Building, H- Sludge Control Building, I- Post Chlorination Building, J- Parking Shed, K- Garage & Emergency Repair Shop.



NORTH POINT SLUDGE PLANT AT ISLAIS CREEK

Legend K-Receiving & Thickening Building, L-Digestion Group No 1,
M-Digestion Group No 2, N-Digestion Group No 3,
O-Digestion Group No 4, P-Waste Treatment Building,
Q-Extrusion Building, R-Filtration Building, S-Dryer Building

SOUTHEAST SEWAGE TREATMENT PLANT AT ISLAIS CREEK

Legend A-Pra-Treatment Building, B-Grit House, C-Pumping Station,
D-Pra-Aeration & Sedimentation Building, E-Stage Control
Building, F-Chlorine Building, G-Pest Chlorination Building,
H-Machine Shop & Garage, I-Administration Building,
J-Parking Area

SEWAGE DISPOSALNORTH POINT SEWAGE TREATMENT PLANT

As described in some detail in the previous annual report (pp. 83-84) the North Point Sewage Treatment Plant will consist of two units, the screening, sedimentation and chlorinating facilities being located near Bay Street and Grant Avenue and the sludge treatment facilities in the vicinity of Quint Street and Jerrold Avenue. Plans and specifications for both units were completed in December 1947 and the two contracts were advertised for bids in the early part of January. The low bids received on the two units were as follows: February 11, Sludge Plant \$4,770,479; February 25, Treatment Plant, including influent and effluent sewers, \$8,140,000. After adding to the total amount of these low bids the cost of the sludge pipe line between the two plants and the probable cost of incidentals and engineering, it was found that approximately \$15,000,000 would be needed. Since it was possible to make available only about \$9,000,000, the bids were necessarily rejected on March 15, 1948.

SEWAGE TREATMENT BOND ISSUE 1948

On June 1, 1948, the voters approved a bond issue of \$15,000,000 to complete the sewage treatment system for the City. This amount is intended to cover the money shortage in meeting the cost of the North Point Sewage and Sludge Treatment units, the additional plant to be built for the Southeast Sewerage District, and the necessary intercepting sewers and pumping stations.

REVISION OF NORTH POINT PLANS

Anticipating a new call for bids, the plans for the sewage treatment plant at Bay Street and Grant Avenue were checked, reviewed, and modified in the spring of 1948. The influent and effluent sewers were omitted with the thought of letting them as a separate contract at a later date. As revised, the plans and

specifications should be ready for advertising in the early fall of 1948.

PRELIMINARY STUDIES SOUTHEAST DISTRICT

Following the 1948 Bond Issue, preliminary studies of the Southeast Sewerage District were undertaken, including a tentative layout of the Southeast Sewage Treatment Plant. This plant will be constructed on the land acquired for the purpose which was bought in conjunction with the North Point Sludge Treatment Plant to be constructed in the vicinity of Quint Street and Jerrold Avenue. At the same time, a study was undertaken to determine the general location of the elements of the interceptor system which will be required to collect and divert sewage to the Southeast Treatment Plant. Preliminary conclusions seem to indicate that three sewage pumping stations will be necessary to serve the district. To aid in design of the interceptor system, as well as the treatment plant, a sewer gauging survey was undertaken in the spring of 1948 to determine sewage flows at the various outfalls into the bay and also at the points in the present system where diversions would be made by interceptor sewers.

FUTURE CONTRACTS

The completion of the sewage treatment program will take several years. It is expected that the various units of the entire system will be undertaken in approximately the following order: North Point Sewage Plant; North Point Sludge Plant; Sludge Force Main; Influent and Effluent Sewers at North Point; Southeast Sewage Treatment Plant; Interceptor Systems.

INDUSTRIAL WASTE SURVEY

In March 1948, a survey of major industries in the City was undertaken to determine the nature and volume of wastes from plant processes and their probable effect on the City's sewer and sewage treatment systems. Current practices in making such surveys in the City of Los Angeles, the County of Los Angeles, and various other places were first investigated and then used as a preliminary guide. The work was done under the supervision of the superintendent and assistant superintendent of the Richmond-Sunset Sewage Treatment Plant and with the advice and cooperation of the staff of the Bureau of Sewer Repairs.

INFORMATION OBTAINED

At each industry visited by a representative of the survey the best information possible was obtained on the following points: (1) the type of industry and the processes used; (2) the volume and composition of plant wastes; (3) present facilities within the plant for treating plant wastes prior to release; (4) the point at which plant wastes are now discharged, i.e., into City sewers or at the margin of the bay. During the same period an examination of the bay shore in the southerly portion of the City was made to ascertain the effect of waste discharges. It was found that sludge banks and deposits have formed along the shore-line in the vicinity of all the sewer outfalls and in the areas adjacent to the points of present discharge of industry wastes.

CONCLUSIONS TO BE DRAWN

The information developed by this survey is expected to aid in determining the following:

(1) The probable effect of present industrial wastes on the City's sewerage system, particularly as to probable deposits in the sewers calling for additional maintenance work and also the possible deterioration of the sewers themselves caused by the nature

of the waste.

(2) The probable effect of present industrial wastes on design of the sewage treatment plants, on their operating costs and on the nature of the effluent produced by such plants.

(3) The additional waste treatment facilities which might be required at various industries to avoid damage to the sewers or overloading of the City's treatment plant facilities.

PROGRESS TO DATE

During the fiscal year approximately 380 individual industries were visited of which 256 were found to have industrial waste. The survey did not cover restaurants, service stations, hotels, hospitals, and markets since waste from such places was believed to be approximately equivalent to domestic sewage. The survey of the Southeast Sewerage District was completed. A summary of the results of the survey in this district is shown below. A survey of the North Point Sewerage District is now under way.

Summary of Industrial Waste Survey

Southeast Sewerage District

Industries surveyed	176
Industries having industrial wastes	93
Plant Treatment Facilities:	
Industries requiring no treatment	17
Industries having adequate facilities	20
Industries which should provide additional treatment facilities	56

Place and volume of discharge:

City sewers	67	industries	2,123,700	gals. per day		
San Francisco Bay	19	"	2,079,900	"	"	"
Ground	<u>7</u>	"	<u>10,100</u>	"	"	"
Totals	93	"	4,213,700	"	"	"

AUXILIARY WATER SUPPLY SYSTEM

The system provides a high pressure standby service for fire protection. Since the inception of the system early in 1908, the Bureau of Engineering has, at the request of the Fire Department, furnished all necessary engineering service in connection with the design, installation, and incidental alterations of the system as well as the design and details of equipment used by the Fire Department for fire fighting purposes.

Street improvements undertaken and other projects contemplated for the near future made it necessary to plan a number of modifications of the existing high-pressure lines during the past year. The principal changes expected to be required are in connection with the North Point Sewage Treatment Plant, the Bayshore Freeway to be constructed by the State, and City street improvements on Fairfax Avenue between Third and Phelps Streets, and on Falmouth Street between Folsom and Shipley Streets.

A number of investigations were made in connection with other contemplated improvements; and records and maps of pipe line installations were brought up to date.



12" A.W.S.S. pipe being raised
an average of 4 ft.

SURVEYS AND MAPPINGGENERAL SURVEYS

Four survey parties were employed continuously until February 19, 1948 at which time a fifth party was organized. The work included preliminary topography, profiles and cross-sections required for design purposes; the setting of control lines and elevations preceding construction work; final examinations to determine quantities of work done and to record actual position, dimensions and elevation of assessment proceeding work; and the establishment and checking of monument lines and bench lines and bench marks. Surveys made covered about 800,200 lineal feet or 151.5 miles in 1,007 City blocks. Distribution by type of survey is shown below.

General Surveys

<u>Type of Survey</u>	<u>Length in Feet</u>
Lots	16,350
Sewers	14,000
Cross-sections	140,410
Subsidence	13,050
Monument Lines	48,800
Topography	259,200
New Streets	92,400
Line and Grade for Curb and Paving	215,690
Miscellaneous	<u>300</u>
Total	800,200

In connection with parts of the above work, 80 monuments were set, checked, referenced, or re-capped.

PRECISE LEVELS

In addition to the general surveys described, precise level lines were run aggregating 16.5 miles, and 1,253 bench marks were set. This work was distributed by districts as follows:

Precise Levels

<u>District</u>	<u>Bench Marks</u>	<u>Distance - Miles</u>
Western Addition	558	8.0
One Hundred Vara	47	1.5
City Land	493	4.5
South San Francisco	<u>155</u>	<u>2.5</u>
Total	1,253	16.5

NUMBER OF SURVEYS AND FEES RECEIVED

The following tables show the number of surveys performed during the year and the fees received from contractors and others to cover the cost of surveys made.

Public Improvement Surveys

For Public Contracts	41
For Private Contracts	17
Resurveys for Private and Public Contracts ..	30
For Municipal Departments	<u>147</u>
Total Surveys for Public Improvements	235

Lot Surveys

For Private Owners	<u>1</u>
For Municipal Departments	<u>6</u>
Total Lot Surveys	7

Survey Fees Received1947

July	\$ 820
August	360
September.....	975
October	1,120
November	2,010
December	2,150

1948

January	1,330
February	200
March	620
April	1,400
May	430
June	<u>800</u>

Total\$12,215

OFFICE WORK

Fifty eminent domain actions and actions to quiet title to land (McEnerney Actions) referred to the Bureau by the City Attorney to determine the City's interest in the property involved were investigated and reported upon during the year. Twenty of the 100-scale grade maps were redrawn, bringing the complete file up to date. The final layout for the long contemplated connection of Montana Street with Josiah Avenue across Summit Street was completed.

STREET DEDICATIONS AND CHANGES

Numerous actions taken by the City during the year with reference to subdivisions and streets were based on recommendations of the Bureau of Engineering and in most cases involved specific descriptions prepared by the Surveys and Mapping Section of the Bureau.

TENTATIVE SUBDIVISION MAPS

Four tentative maps covering new tracts and two revised maps were received from subdividers. Copies were sent to the City Planning Commission for review and report. All maps were checked for boundary and subdivision lines, street grades, sewer design and location of catch-basins.

Tentative Maps Received 1947-1948

Assessor's Block 6582 - a resubdivision of a portion of Horner's Addition, Block No. 179 - off 27th Street between Castro and Diamond Streets.

La Grande Vue Tract situated northerly from LaGrande Avenue near Felton Street.

Resubdivision of portion of University Mound Tract adjacent to Lick Old Ladies' Home.

Plov Property between County Line and Chicago Way, east of South Hill Boulevard.

Apparel Heights - Revised.

Perego Heights - Revised.

SUBDIVISION MAPS FILED

Five final subdivision maps were approved by the City Engineer and Director of Public Works and filed in the Recorder's Office during the year as indicated below:

Subdivision Maps Filed 1947-1948

Laurel Heights (formerly Laurel Hill Cemetary)

Apparel City

Widening of St. Charles Avenue and Niantic Avenue

Opening of streets and alleys in Miraloma Park

Laurel Heights - Resubdivision

GRADES ESTABLISHED

Grades were established on five blocks of three different streets having an aggregate length of 1,720 feet as follows:

Farnum Street - Moffitt Street to Thirty-first Street

Moffitt Street - Castro Street to Farnum Street

Moreland Street - Farnum Street to Diamond Street

GRADES CHANGED

Official street grades were changed on five blocks on five different streets having an aggregate length of 2,428 feet as follows:

Forty-first Avenue - Santiago Street to Taraval Street

Ramsell Street - Palmetto Avenue to Alemany Boulevard

Rhode Island Street - Alameda Street to Fifteenth Street

Tunnel Avenue - Blanken Street to southerly termination

Montana Street - Plymouth Avenue to Summit Street

SIDEWALK WIDTHS CHANGED

Sidewalk widths were officially changed on the 17 blocks indicated below having a total length of 8,480 feet:

Clara Street - Fourth Street to Sixth Street

Reduced from 7 feet to 6 feet.

Columbia Square Street - Folsom Street to Harrison Street

Abolished 7'-6" walk on southwesterly side.

Falmouth Street - Folsom Street to Shipley Street

Reduced from 7 feet to 6 feet.

Shipley Street - Fourth Street to Sixth Street

Reduced from 7 feet to 6 feet.

Montana Street - Plymouth Avenue to Summit Street

Reduced from 10 feet to 8 feet on the south side.

Increased from 10 feet to 22 feet on the north side.

Farnum Street - Moffitt Street to Thirty-first Street

Reduced from 10 feet to 7 feet.

CLOSING AND ABANDONING STREETS

Twenty petitions to close and abandon portions of City streets and one petition to open and extend a street were received, investigated, and acted upon. Of these, six petitions are still in the process of completion; three have been denied; six protested; and the following five were recommended and passed:

Quesada Avenue	- 50' to 400' southeast of Quint Street
Quesada Avenue	- 400' to 475' southeast of Quint Street
Tovar Avenue	- County Line to Shore Line
Worcester Avenue	- St. Charles Avenue to Ralston Street
Teresita Boulevard	- at Sequoia Way

Two petitions received in the 1946-1947 fiscal year were acted upon and completed; one included a portion of La Grande Avenue near Persia Avenue and the other covered portions of 29th Street, Day Street, and La Place Avenue in the vicinity of O'Shaughnessy Boulevard.

LABORATORY AND TESTING WORK

The testing laboratory was operated as a part of the Division of Construction to control materials used on construction projects and, particularly, to verify asphalt and concrete mixes used on street work and in various structures. In addition, many routine tests were made for the Purchaser of Supplies and for various other City departments.

NEW TYPE ASPHALTIC CONCRETE

In connection with the widening and repaving of 7th Street from Mission Street to Harrison Street, a new type of asphaltic concrete was employed patterned largely after a mix used by the City of Seattle. It consisted of approximately 65% of 3/4-inch maximum gravel without dust, 4 to 5% of asphalt, and regular asphalt sand. This mix worked very well and produced a good non-skid surface.

CONCRETE

Class E concrete, normally specified for street paving work, contains rock up to a 3-inch maximum size. Difficulty was encountered during the year in securing this type of rock in view of the limited bin capacity in the pre-mix plants and the fact that other types of work throughout the City called for smaller maximum sizes. Under these circumstances, a maximum of 1-1/2 inch rock was permitted on City paving with satisfactory results.

The use of 2 pounds of calcium chloride per sack of cement to produce early setting was continued on street paving jobs due to the impossibility of securing early hardening cement. Early hardening is essential, particularly on track removal projects now under way, in view of the importance of keeping traffic interferences to a minimum.

GREAT HIGHWAY SEAL COAT

The contractor employed to apply the seal coat on the Great Highway endeavored to secure necessary rock chips from local quarries and had great difficulty in securing uniformly satisfactory material. Frequent inspection during the progress of the work indicated a wide variation in quality and made it necessary to reject several deliveries. A satisfactory surface was finally obtained, the only objection to it being a number of quite noticeable changes of color due to varying types of rock.

SUMMARY

A summary of the tests made during the past year for various City departments is shown in the following table, together with corresponding figures for the preceding year for comparative purposes.



Geary Blvd. - between Presidio Ave. and Baker St.
showing existing street and widening

Laboratory Tests

<u>Chemical Tests</u>	<u>1946-1947</u>	<u>1947-1948</u>
Public Utilities Commission	12	40
Purchaser of Supplies	8	25
San Francisco Fire Department	30	36
Park and Recreation Department	0	8
Bureau of Engineering	<u>16</u>	<u>59</u>
Total	66	168
<u>Physical Tests</u>		
Public Utilities Commission	80	43
Department of Public Works	110	103
Purchaser of Supplies	53	72
Bureau of Architecture	0	14
San Francisco Fire Department	109	113
Bureau of Engineering	<u>60</u>	<u>76</u>
Total	412	421
<u>Concrete Tests</u>		
Public Utilities Commission	72	79
Bureau of Architecture	6	22
Bureau of Engineering	<u>682</u>	<u>569</u>
Total	760	670
<u>Asphalt Tests</u>		
Public Utilities Commission	9	13
Park and Recreation Department	2	6
Department of Public Works	80	96
Corporation Trenches	0	49
Bureau of Engineering	<u>150</u>	<u>114</u>
Total	241	278
<u>Paint Tests</u>		
Purchaser of Supplies	14	28
Public Utilities Commission	0	4
Bureau of Architecture	6	8
Park and Recreation Department	0	6
Bureau of Engineering	<u>18</u>	<u>37</u>
Total	38	83
<u>Coal Tar</u>		
Public Utilities Commission	28	28
Bureau of Engineering	<u>0</u>	<u>0</u>
Total	<u>28</u>	<u>28</u>
Totals	1545	1648

SERVICES PERFORMED
FOR OTHER BUREAUS AND DEPARTMENTS

The Bureau continued the practice of complying with requests for the furnishing of technical services to other bureaus within the department, and other departments of the City whenever it was possible to do so. The following is a summary of the principal services performed.

For Bureau of Street Repair

Prepared plans and specifications for new dust collecting system for the Municipal Asphalt Plant after having made a thorough survey of the conditions.

Prepared plans and specifications for a new 20-ton scale at the Municipal Asphalt Plant.

Investigated and reported on car dumper for Municipal Asphalt Plant.

For Bureau of Building Repair

Investigated and reported on necessity of replacing 5-in. leader lines at Hall of Justice.

For Park Commission

Designed lighting towers for Kezar Stadium - to illuminate stadium for night games.

Made recommendations as to operation and maintenance of the activated sludge plant in Golden Gate Park.

For Department of Electricity

Prepared plans and specifications for construction of retaining wall under storage building at 264 Golden Gate Avenue where excavation for adjacent buildings had removed the support upon which the storage building was resting.

For California Legion of Honor Commission

Prepared plans, specifications and estimates for a second 75,000 gallon reinforced concrete cistern for fire protection.

For Department of Public Health

Made periodic trips to the Hassler Home in San Mateo County to advise on operation and maintenance of sewage treatment plant.

Investigated operation of Emerald Heights Sewage Treatment Plant and arranged with San Mateo County Engineer for proper chlorination of effluent.

For Sheriff's Office

Made inspections and tests at regular intervals for control of operation of the activated sludge treatment plant at County Jail #2 in San Mateo County and arranged for overhaul of pump aerators.

For Juvenile Court Department - Log Cabin Ranch

Investigated and reported with reference to the installation of a water softener.

Prepared estimate of cost to install 2-inch water line to dormitory.

For Municipal Railway

Estimated cost of bridges over proposed Municipal Railway cut at Ocean Avenue, Eucalyptus Drive and 19th Avenue.

For Mayor's Office (Civilian Defense)

Plans, specifications and estimate for removal of Air Raid Sirens.

For Chief Administrative Officer

Estimate of cost of building a shed at the Farmers' Market.

For Purchaser of Supplies

Preliminary estimate of cost of installing an elevator from the 4th to 5th floors of the City Hall.

Testing

The Laboratory and Testing Section made numerous examinations and tests for other bureaus and departments as indicated below.

	<u>1947-48</u>	<u>1946-47</u>
Bureau of Architecture	44	12
Other Bureaus of the Department	199	190
Park & Recreation Departments	20	2
Public Utilities Commission	207	201
Purchasing Department	125	75
Fire Department	<u>149</u>	<u>139</u>
Total	744	619
Bureau of Engineering	<u>904</u>	<u>926</u>
Totals of all tests	1648	1545



Traffic Signal Maintenance Truck

POST-WAR STATE AID

The City continued to take full advantage of the two State Aid acts providing assistance to local communities for planning and construction of public works. The designation of the two acts and the amounts allocated to San Francisco are as follows:

Planning Assistance Act (Chap. 47 Statutes of 1944)

Allocation for plans (Dept. of Pub. Works)	\$ 540,800
Allocation for land purchases	<u>249,622</u>

Total (to Dept. of Pub. Works)	\$ 790,422
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Construction and Employment Act (Chap. 20 Statutes of 1946)

Allocation for highway work	\$ 398,383.79
Allocation for other work	<u>7,959,078.97</u>

Total	\$8,357,462.76
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During the year no additional applications for planning funds were filed, but a number were cancelled and one was substantially increased. Four additional applications for major construction projects were submitted. Claims for reimbursement were paid by the State in an aggregate amount of \$1,165,469.48, bringing the total amount paid to date to \$1,478,162.13.

APPLICATIONS FOR PLANNING FUNDS

The City requested the State to cancel 7 approved applications for planning funds, 4 being for sewer projects and 3 for highway projects. This action was authorized by Resolutions Nos. 7498 and 7499 of the Board of Supervisors which stated that the reason for cancelling was "to give preference to more urgent projects which can be completed so that claims for payment may be presented to the State on or before June 30, 1952 the closing date." As a result of these cancellations it became possible to apply for an increased allocation on the application previously approved for the planning of the North Point Sewage Treatment Plant. The State allotment for this work was increased from \$195,000 to \$300,000.

At the end of the fiscal year 19 applications for planning funds were active, as shown in Table I, Appendix III, the total State's share being \$474,163. This list may be compared with the list of 31 active applications at the beginning of the fiscal year, the reduction in number being accounted for by the cancellations effected and the final payments made during the year. An explanation of the changes during the year due to final payments, cancellations and adjustments will be found in Table II, Appendix III.

REIMBURSEMENT RECEIVED ON PLANNING APPLICATIONS

During the fiscal year claims were filed and payments received on 10 projects, the total amount received being \$97,842.05. On 7 of the projects final payment was received, and on the remaining three partial payments were received.

On two applications (Nos. 88 and 89) minor refunds were made to the State after the final claims had been paid to conform with adjustment of the claims recommended by the auditors of the State Controller's office. A list of the payments received during the year is given in Table III, Appendix III. The refunds mentioned are also indicated in this table. The balance of the State allocation for plans still to be collected is \$277,902.95

APPLICATION AND REIMBURSEMENT FOR LAND ACQUISITION

Under Application No. 2013 approved by Res. No. 53 dated January 15, 1947, an allocation of \$249,621.72 was approved for the purchase of rights-of-way on the Army-SanJose-Guerrero Highway Project. A partial claim for \$89,474.35 was paid by State Voucher on August 22, 1947. No additional claims for reimbursement were made under this application due to the fact that little progress was made during the year in acquiring additional land covered by the application.

APPLICATIONS FOR CONSTRUCTION FUNDS

Four new applications for construction funds were submitted

by the City during the fiscal year. Three of them, applying to three separate units of the North Point Sewage Treatment Plant, were approved by the State and allocations were authorized in the total amount of \$3,988,050. The fourth application, applying to the Islais Creek Bridge in the amount of \$398,383.79, submitted on May 17, 1948, was still pending before the State Allocations Board.

The total number of applications still active was substantially reduced below the number shown in the previous annual report (p. 109). The reduction was due to the settlement in full of reimbursement on 12 of the projects originally listed. The active applications for construction funds, as of June 30, 1948, are shown in Table IV, Appendix III.

REIMBURSEMENT FOR CONSTRUCTION PROJECTS

Seventeen claims for construction cost reimbursement were paid by the State on claims filed in the past fiscal year in the amount of \$978,153.08 as shown in Table V, Appendix III. Together with reimbursement on previous claims (see previous annual report, p. 110) the total reimbursement by the State to date is \$1,125,790.73 under Chapter 20.

Of the 9 active applications remaining on file, totaling \$5,154,442.29, partial payments of \$335,375.60 have been made, thus leaving a balance on active applications of \$4,819,066.69 still to be collected.

BALANCE OF CONSTRUCTION ALLOCATION - NOT APPLIED FOR

As of June 30, 1948, San Francisco had applied for all but \$2,412,605.34 of the total allocation available to the City for construction projects, as indicated below:

Total allocation to San Francisco		\$8,357,462.76
Applications filed and paid in full:		
Paid 1946-1947	\$ 14,885.00	
Paid 1947-1948	<u>775,530.13</u>	\$790,415.13
Active applications (Table IV)	<u>5,154,442.29</u>	<u>5,944,857.42</u>
Balance of allocation		\$2,412,605.34

SUMMARY OF STATE AID FUNDS RECEIVED

The following table summarizes the payments received from the State under the two State aid acts to July 1, 1948.

<u>Payments Received from State</u>			
<u>Act and Item</u>	<u>1946-47</u>	<u>1947-48</u>	<u>Total</u>
<u>Planning Assistance Act</u>			
Plans	\$ 165,055.00	\$ 97,842.05	\$ 262,897.05
Land acquisition	0	89,474.35	89,474.35
Total	\$ 165,055.00	\$ 187,316.40	\$ 352,371.40
<u>Construction and Employment Act</u>			
Highway Projects	0	0	0
Other Projects	\$ 147,637.65	\$ 978,153.08	\$ 1,125,790.73
Total	\$ 147,637.65	\$ 978,153.08	\$ 1,125,790.73
TOTALS - both acts	\$ 312,692.65	\$ 1,165,469.48	\$ 1,478,162.13

Payments received from the State to July 1, 1948 have been credited to City accounts as follows:

<u>City Accounts Credited</u>			
<u>City Account</u>	<u>Payments from State For</u>		<u>Total</u>
	<u>Plans & Land</u>	<u>Construction</u>	
1944 Sewer Bond Fund	\$ 232,233.63	\$ 1,125,790.73	\$ 1,358,024.36
Special Gas Tax Fund	106,237.85		106,237.85
Special Road Impt. Fund	11,166.42		11,166.42
State Highway Trust Fund	2,733.50		2,733.50
Totals	\$ 352,371.40	\$ 1,125,790.73	\$ 1,478,162.13

GARBAGE DISPOSAL

Disposal of garbage and refuse by the sanitary fill method was continued during the past year following, in general, the procedure which has been in effect since 1932. One major change in operation was brought about by the discontinuance of railroad service to the fill on September 25, 1947. Since that date, all garbage and refuse have been hauled from points of collection direct to the fill area by truck.

During the operation of rail service the Sanitary Fill Company received \$1.10 a ton for all material delivered at the loading platform by the garbage collectors. The company paid for railroad charges on the 6-mile haul to the dump and handled all the expense of unloading the cars with clam-shell machines, bulldozing into place and covering with earth.

At the present time the Sanitary Fill Company is receiving 90¢ a ton for material delivered directly to the dump and pays all costs of spreading and covering. This has eliminated the use of the clam-shell machines, thereby saving some expense but, on the other hand, much more work has been involved in maintaining the roadways across the fill area to the dumping points.

The roads stood up well during the past winter, but it must be taken into consideration that the rainfall was very much below normal.

STATISTICS

The accompanying tabulation shows various figures as to costs and quantities for the calendar years 1946 and 1947. The increase in yardage of cover material, even though the tonnage of garbage and refuse declined, is due to the material used in road-building and maintenance. The cost of quarrying and transporting the material used in road-building is included in the cost of cover material. The work was done with the same crew and equipment that



Sanitary fill, showing portion of filled land being used



Nearby hills from which cover material is obtained

handled the cover material. The inclusion of the road-building and maintenance costs in the comparative statistical calculations results in an apparent reduction of the cost of cover material per yard and in the depth of garbage and refuse covered by each two feet of earth and in an increase of the yards of earth cover per ton of garbage and refuse.

FRANCHISE PROVISIONS

The terms of the new franchise granted to the Sanitary Fill Company for 20 years from September 24, 1946 are reported in detail on page 112 of the Annual Report of the Department of Public Works for the fiscal year ending June 30, 1947.

COMPARISON OF STATISTICS FOR CALENDAR YEARS 1946-1947

(From records and financial statements of Sanitary Fill Company)

	Calendar Year 1947	Calendar Year 1946
Total Income	\$258,212.58	\$258,125.87
Expenses:		
Operation	161,949.06	165,900.58
Freight	49,669.58	58,429.88
Administration & Inspection	44,190.97	38,302.99
Total expense	\$255,809.61	\$262,633.45
Tons of garbage and refuse handled	261,506.16	271,314.66
Cost per ton	\$.973	\$.968
Yards of earth cover	178,360	153,140
**Cost of earth cover	\$70,282.50	\$66,324.91
Cost per yard of earth cover	\$.394	\$.433
Cu. yds. earth cover per ton garbage and refuse	.680	.564
*Depth of garbage and refuse for 2 feet of earth	4.16	5.43
Number of truckloads delivered direct to the fill	26,512	11,786
Number of carloads to fill from loading platform	9,742	13,933
Number of carloads to fill from elsewhere	331	298

Starting September 26, 1947, car service from loading platform was discontinued, trucks being used to haul direct to dump.

*Based on assumption that garbage after placing, covering, and compacting weighs 1400 lbs. per cu. yd. against 700 lbs. per cu. yd. as assumed for weight of garbage.

** On site costs only.

SEWAGE PUMPING STATIONSExisting Pumping Stations

The sewage system of San Francisco includes at the present time eleven pumping stations, one of which forms a part of the Richmond-Sunset Sewage Treatment Plant and is operated by the sewage plant staff. The remaining ten stations are operated under the supervision of the Electrical Section of the Division of Design. Table I of Appendix IV lists these ten pumping stations and gives pertinent information as to their size, capacity, approximate cost, and function. Tables II to X, inclusive, of the same Appendix gives in detail the operating costs of the various pumping stations. Details of the operation of the Richmond-Sunset Station are included in the description of the operation of the treatment plant.

The pumping stations are located in low-lying areas of the City, which cannot be drained by gravity into existing main sewers. Their capacities are sufficient to handle all sanitary sewage and, in addition, to take care of a portion of rainfall run-off in order to prevent pollution of shore-waters by the first scourings from the streets. Generally the stations are provided with overflow spillways so that run-off beyond the capacity of the station is discharged directly into the ocean or bay. In most cases the stations have sufficient capacities so that at least one pumping unit can be shut down to permit repairs.

All of the pumping stations have automatic float controls. At two of the larger stations, namely, Marina and Commercial, operators are on duty during two eight-hour shifts per day to perform necessary maintenance work and make required adjustments. At each of two other stations - Sea Cliff No. 2 and Parkmerced - an operator is on duty for a single shift each day. The operating staff during the year included:

- 1 Assistant Engineer I, Electrical
- 2 Operating Engineers
- 4 Junior Operating Engineers

Repairs and Replacements

During the past fiscal year, in addition to routine maintenance repairs and replacements, the following major repairs and improvements were made at the stations indicated.

Marina Station - Certain parts of the water lines within the station and part of the service line from the water meter were found to be badly corroded and were renewed.

Commercial Street Station - A complete new seal-water system with appurtenances was installed, replacing the old system which was badly corroded and leaking. A breakage occurred on the force main in January. This station cannot be by-passed or shut down for repairs due to the fact that the drainage system is located below sea level. In order to take care of the sewage during the excavation and repair of the force main, it was necessary to install a temporary discharge line. In order to have operating personnel on continuous duty it was necessary to secure the employment of one additional Junior Operating Engineer for this period.

Parkmerced Station - All four pumps were dismantled, worn packing sleeves replaced, and the impellers checked for balance.

Fitzgerald Station - Pump #1 was completely overhauled. The influent line was slightly altered and an 8-in. gate valve installed. The cleaning of the sump can now be carried out without danger of unexpected flooding.

Safety Guards

To comply with the requirements of the State Industrial Accident Commission, safety guards for equipment were installed at Parkmerced, Commercial Street, Sea Cliff No. 2, Vicente, and Marina Stations.

New Stations

Hyde Street Station - Construction of this station was completed and accepted in April 1948. The station is located on the southwest corner of Jefferson and Hyde Streets. It is one of the final units of the program to remove sewage pollution along the north shore line, particularly at Aquatic Park -- one of San Francisco's popular recreational beaches. The sanitary area tributary to this station comprises 14 acres and is bounded on the north by San Francisco Bay, on the south by Beach Street, on the west by Larkin Street, and on the east by Jones Street. The sewage is pumped into the present gravity system which is tributary to the proposed North Point Sewage Treatment Plant.

Lakeshore Park Station - This station is located near the north shore of the northerly arm of Lake Merced. It was constructed by the owners of the adjacent subdivision and was accepted by the City in April 1948. The sanitary area tributary to this station contains 220 acres in the Lakeshore Park #3 Subdivision. The sewage will be pumped into the Eucalyptus Drive sewer. Connecting sewers are not yet installed.



Parkmerced Pumping Station

RICHMOND SUNSET SEWAGE TREATMENT PLANT

The Richmond-Sunset Sewage Treatment Plant was constructed originally in 1938 to eliminate sewage pollution of the ocean waters and to prevent deposits of sewage solids along the north and west shores westerly from Fort Point. There has been a material improvement of shore conditions since the plant has been in operation. The State of California Department of Public Health issued a permit to the City for operation of the plant on March 8, 1948.

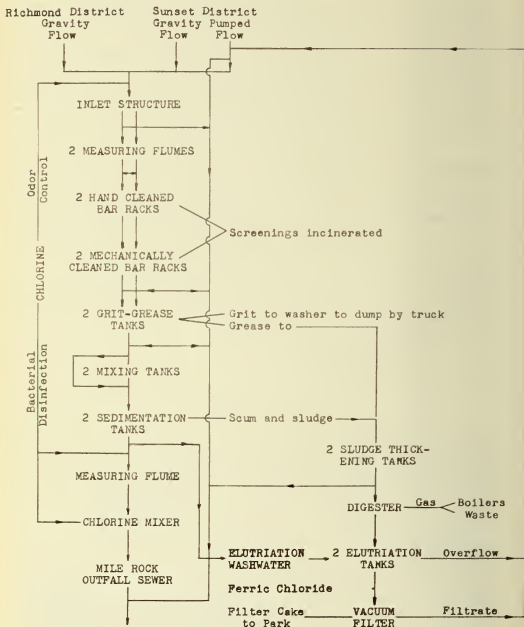
The plant treats the sewage from the Richmond and Sunset Districts, the residential areas of the western slope of the City, covering an area of 8,060 acres, with a contributing population of approximately 210,000 people. It occupies an area of approximately four acres in the southwest corner of Golden Gate Park near the South Windmill east of the Great Highway. The main structures of the plant, including those constructed under the recent enlargement contract, are:

- Water Storage Building
- Pretreatment Building
 - Measuring flumes
 - Bar racks
 - Grit grease tanks
 - Chlorinators
- Mixing and Sedimentation Building
 - Sludge thickeners
 - Mixing tanks
 - Sedimentation tanks
- Digesters and Control House
- Main Building
 - Sunset Pumping Station
 - Flutriation system
 - Vacuum filters
 - Boilers
 - Laboratory
 - Storage and shop
 - Administration
- Garage

Plant Functions and Operating Data

The plant functions are shown graphically on the Flow Diagram and operating data are given in the Summary of Operation, which appear on the two following pages.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT
FLOW DIAGRAM*



*To July, 1948; additional units constructed in enlargement contract not included.

SUMMARY OF OPERATION

(For details and costs refer to tables in appendix V)

Sevage Flows:

Millions of gallons, by gravity ^a (353 days)	2,195.6
pumped (301 days)	1,484.3
total	3,679.9
Average daily flow ^b , mgd, by gravity ^c	6.2
pumped	4.9
total	11.1

Screenings, cu.ft.: (Sunset Pumping Station
not included)

Total	5,317
Per million gallons	1.45
<u>Sand, cu.yd.:</u> from grit tanks	770
from Sunset Pumping Station	401
total	1,171
average per million gallons	0.32
<u>Grease, gallons:</u> from grit grease tanks	296,900
from other units	Not determined
<u>Chlorination, lb.:</u> pre	111,160
post	279,440
total	390,600
per million gallons, pre	30
per million gallons, post ^d	90

Sludge Control and Sedimentation:

Suspended solids, ppm, raw	240
effluent ^e	80
per cent removed	67
5-day BOD, ppm, raw	240
effluent ^e	145
per cent removed	40
Raw sludge to digester, gallons	16,127,500
dry solids, lbs.	5,727,700
total solids, %	4.23
volatile solids, %	84.2

Digestion:

Sludge to elutriation, gallons	21,179,800
dry solids, lbs.	1,627,900
total solids, %	0.92
volatile solids, %	65.5
Gas production ^f , metered, cu.ft., to boilers	20,583,000
to waste	17,147,700
total	37,730,700

Vacuum Filtration:

Hours operated	1,444
Sludge filtered, gallons	5,003,000
dry solids, lbs.	1,381,100
total solids, %	3.26
volatile solids, %	67.5
Ferric chloride, lbs.	49,160
% on dry solids	3.56
Filter cake, lbs.	5,457,800
dry solids, %	25.9

^a Before November 3, 1947 - Richmond flow only.After November 3, 1947 - Richmond flow plus portion of
Sunset flow diverted at 46th Avenue and Lincoln Way.^b For actual time of operation.^c 4.7 mgd before November 3, 1947; 7.0 mgd after Nov. 3, 1947.^d For chlorinated flows only.^e For normal operation when not affected by construction.^f Leakage through digester seals not included

LABORATORY

Approximately 12,000 routine and special analyses were made during the year as shown in the following table.

Regular Routine AnalysesDaily:

Raw sewage and plant effluent (24-hr. composites):
suspended solids, alkalinity, chlorides

Raw sludge (24-hr. composites): solids, volatile matter

Digested sludge (2 levels): solids, volatile matter,
alkalinity, pH

Elutriated sludge (filter run composites): solids,
volatile matter, alkalinity, specific gravity

Filter cake (filter run composites): solids, pH

Ferric chloride for filter operation: pounds ferric
chloride per gallon

Digester gas: density

Bi-weekly:

Raw sewage and plant effluent (24-hr. composites):
5-day BOD

Monthly:

Filter cake composites: nitrogen, phosphorus, humus

Sand from sand washer hoppers: volatile matter, sieve
analyses, specific gravity

Digester: solids and volatile matter inventory

Miscellaneous:

Ferric chloride shipments received: per cent ferric
chloride, specific gravity

Special Analyses and Investigations

Effect of circulation of sludge on digester stratification
and scum formation.

Limited number of analyses of industrial wastes in conjunction with industrial waste survey being conducted under supervision of this plant.

Research for improvements of laboratory methods of analyses.

Field and laboratory tests at regular intervals throughout

the year for control of operation of the activated sludge treatment plant at County Jail #2 and sewage treatment plant at Hassler Health Home, both in San Mateo County.

IMPROVEMENTS MADE DURING YEAR

Plant - General

Installed additional rails, guards, etc., to meet requirements of Industrial Accident Commission.

Pre-Treatment

Installed air diffusion system in channels before and after mechanical bar racks.

Main Building

Replaced existing ferric chloride pump with air actuated rubber lined diaphragm type pump.

MAINTENANCE & OPERATION

Personnel

1 Superintendent	
1 Assistant superintendent and chemist	
1 Laboratory assistant	
1 Clerk-stenographer	
1 Chief operating engineer	
2 Operating engineers	) Day shift -
1 Junior operating engineer	
2 Operating engineers	) Monday through Saturday
2 Junior operating engineers	
1 Operating engineer	) Two shifts -
1 Junior operating engineer	
2 Laborers	) one of each per shift
1 Truck driver	
17 Total	) Relief and maintenance

Operation

The plant was operated continuously 24 hours a day on a three-shift basis except for by-passing of the Sunset sewage during rain or for construction of the enlargements. Necessary cleaning of tanks has been accomplished in a manner to allow for operation of some of the units so that the sewage would be partially treated during this period, thus minimizing the time when the whole plant was out of service. Whenever possible, repair and maintenance have

been scheduled to conform with shutdown periods.

Maintenance

Regular schedules of operation and maintenance have been set up. Some of the functions, such as general inspection, lubrication, etc., are carried on regularly as assigned duties for plant operating personnel. In addition, a schedule for periodic inspection, repair and maintenance has been laid out as follows: (Note - the following tabulation refers to the main items requiring servicing or replacement - other items are taken care of as needed).

Weekly: Air filters - clean

Monthly: Raw sludge pumps - wearing rings

Quarterly:

Sand pumps - linings
Seeding pump - wearing rings
Ferric chloride pump - impeller, shaft

Semi-annually:

Sevage pumps
Bar racks - wear plates on rake shoes
Vacuum filter - filter cloth
Vacuum filter appurtenances
Blowers
Ball bearing motors - grease change
Boilers - wash

Annually:

Chlorinators
Meters
Tank drives, chains, etc. - links, sprockets

Electrical Work:

Switchboards, panels, electrical connections -
continual maintenance by Bureau of Building Repair
electricians, approximating five days per month.

Painting:

Necessary painting of metal work, walls, etc., by
Bureau of Building Repair painters as required.

Other Work:

Truck repair and machine work are done by Purchasing
Department Shops. Carpentry, plumbing, sheet metal
work, etc., are done by Bureau of Building Repair.

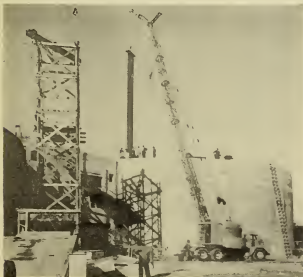
Replacement Parts

A stock of replacement and spare parts is kept on hand. Part repairs requiring machine work beyond the capacity of plant personnel are taken care of by Purchasing Department Shops.

PLANT ENLARGEMENT CONTRACTS

Work on the enlargement contracts referred to in the 1947 Annual Report was continued during the year. At the end of the fiscal year approximately 93 per cent of the structural and mechanical work had been done and all items of both contracts were completed with these exceptions:

- a) Completion of installation of drives in mixing tanks
- b) Changes in Sludge Control House piping pending installation of drives and appurtenances in mixing tanks
- c) Painting of dome of new Primary Digester and installation of mixer drives
- d) Removal of sludge from and remodeling of existing 80-foot diameter digester
- e) Changes in piping in Digester Control House in connection with (d)
- f) Completion of changes to vacuum filter system and piping



Richmond Sunset Sewage Treatment Plant Enlargement
Lowering heat exchanger into new digester

CENTRAL PERMIT BUREAU

S. J. Rosenblum, Head Clerk

FUNCTIONS

During the fiscal year 1947-1948, the Central Permit Bureau, a subdivision of the Department of Public Works under H.C.Vensano, Director, did the largest volume of business since its establishment under the Charter which became effective on January 8, 1932.

The primary function of this bureau is the receiving of applications and the processing of same to the various departments for approval or disapproval as prescribed by the Charter and Ordinances of the City and County of San Francisco. When the necessary approvals are received, it is then the function of this bureau to issue permits predicated upon the applications and to collect fees in payment for the same. This bureau issues Permits of Occupancy in consonance with Section 808 of the new Building Code.

The supervisory head of the Central Permit Bureau also acts as the Cashier for the Department of Public Works. All moneys received by the department are transmitted to him for daily deposit with the Treasurer of the City and County, in conformity with the provisions of Section 82 of the Charter.

PERSONNEL

Personnel of the bureau, as of June 30, 1948, was as follows:

- 1 Head clerk
- 2 Senior clerks
- 1 General clerk
- 1 General clerk-stenographer
- 4 General clerk-typists

Prior to September 1, 1947 the personnel of the bureau consisted of eight employees. One employment was added due to the adoption of Ordinance 4541, Series of 1939, relating to Posting Notices.

WORK PERFORMED

The volume of work flowing through the bureau in the fiscal year 1947-1948 even exceeded that of the fiscal year 1946-1947 which had been the banner year since the establishment of the Central Permit Bureau. Taking Building Permits as an example, we have issued 22% more of this type of permit over the issuance of the previous fiscal year (1946-1947) which, in turn, showed an increase of 6% over the Fiscal Year 1945-1946. Fees received in payment of these permits show an increase of 52% over 1946-1947, which year showed an increase of 10% over 1945-1946. All other types of permits issued by this bureau show a corresponding increase.

Comparative Statement of Permits IssuedPermits

	<u>1947-48</u>	<u>1946-47</u>	<u>1945-46</u>
Buildings	8,887	7,311	6,914
Billboards	443	378	532
Boiler Installations	230	272	200
Boiler Inspections	1,099	7	4
House Moving	62	47	22
Demolitions	69	62	61
Flue Registrations	54	46	31
Flue Permits - New Buildings	42	26	15
Flue Permits - Old Buildings	104	67	49
Flue Coupon Books - New Buildings	119	97	81
Flue Coupon Books - Old Buildings	17	23	15
Construct Sidewalks	35	29	48
Street Space	1,588	1,345	1,344
Excavations	1,154	882	739
Side Sewers	1,078	946	916
Excess Costs - Side Sewers	313	217	115
Sidewalk Flower Markets	40	40	40
Blasting	7	5	1
Advertising	33	18	10
House Number Certificates	1,630	1,244	1,297
Payments for Surveys	45	60	48
Payments for Engineering Inspection	83	86	65
Payments for Street Improvement Bonds ...	-	12	77
Public Utilities Street Openings	7,452	7,179	5,203
Posting Notices	<u>1,259</u>	<u>-</u>	<u>-</u>
Total number of permits issued	25,843	20,399	17,827

Cashier's ReportSource of Receipt

Street space permit deposits	\$ 56,400.00	
Sub-sidewalk " "	850.00	
House-moving " "	6,200.00	
Side sewer " "	196,460.83	
Deposits on plans	<u>22,260.00</u>	
		\$282,170.83

Excavation Permits

Special deposits	\$ 736.50	
Insp. fees for Excav. (Spec. deposits)	78.00	
" " (Public utility corporations)	11,692.50	
" " (Lowering curbs, etc.)	<u>4,968.00</u>	
		17,475.00

Fees for:

Building permits	\$238,330.20	
Billboard permits	995.00	
Demolition permits	725.00	
Boiler installations	1,066.50	
Boiler inspections	4,415.50	
Use of street space	40,686.45	
House number certificates	8,237.00	
House moving permits	1,024.00	
Flue registrations	1,080.00	
Flues - new buildings	20.50	
Flues - old buildings	208.00	
Flues - new buildings (coupons)	1,487.50	
Flues - old buildings (coupons)	340.00	
Posting notices	<u>3,861.75</u>	
		302,477.40
Sidewalk flower markets - fees		1,440.00
Side sewers - excess costs		6,457.20
Advertising charges		4,136.16
Payments on Street Improvement Bonds		-
Payments on Street Improvement Bonds (Ord. of 1934)		936.15
Surveys - fees		12,215.00
Inspections - fees		14,567.17
Miscellaneous		<u>2,636,566.69</u>
Total receipts		<u>\$3,278,441.60</u>

Note: 20 Sidewalk permits issued
No fees charged

Deposits with City and County Treasurer
Classified by Funds

General Fund

Street space and sub-sidewalks	\$	57,250.00	
House-moving		6,200.00	
Side sewers		196,460.83	
Plans		22,260.00	
Surveys		12,215.00	
Inspections		14,567.17	
Excavations:			
Deposits	\$	736.50	
Fees		<u>16,738.50</u>	
			17,475.00
Advertising			4,136.16
Side sewers - excess costs			6,457.20
Fees -			
Building permits	\$	238,330.20	
Billboards		995.00	
Demolitions		725.00	
Street space		40,686.45	
House numbers		8,237.00	
House-moving		1,024.00	
Boiler installations		1,066.50	
Boiler inspections		4,415.50	
Flue registrations		1,080.00	
Flues - new buildings		20.50	
" old buildings		208.00	
" new buildings (coupons)		1,487.50	
" old buildings (coupons)		340.00	
Posting notices		<u>3,861.75</u>	302,477.40
Sidewalk Flower Markets - fees			1,440.00
Street Improvement Fund			
Street Improvement Fund (Ord. of 1934)			936.15

Miscellaneous Funds

State Highway Trust	\$	265,010.83	
General		443.48	
Special Road Improvement		543,191.72	
Special Gas Tax St. Improvem't		751,174.35	
1944 Sewer Bond		<u>1,076,746.31</u>	
			<u>2,636,566.69</u>

Total deposits with City and County Treasurer \$3,278,441.60

Classification of Building Permits Issued

<u>Class or Type</u>	<u>No. of Permits</u>	<u>Estimated Cost</u>	<u>Fees</u>
Class A (now Type 1A)	2	\$ 970.000	
Type 1-A	11	7,959,400	
Class B (now Type 1B)	5	1,038,000	
Type 1-B	10	1,212,000	
Class C (now Type 3)	20	692,550	
Type 3	39	2,108,827	
Type 4	21	231,208	
Frames (now Type 5)	3,018	31,306,285	
Alterations	<u>5,761^o</u>	<u>10,946,128</u>	
Totals	8,887	\$56,464,398	\$238,330.20
Billboards	<u>443</u>	<u>12,652</u>	<u>995.00</u>
Totals	9,330	\$56,477,050	\$239,325.20

(Total number of building applications received - 10,756)

^o47 permits cancelled

Note: Under the old building code, permits were issued as Class A, Class B, Class C, Frame Buildings and Alterations.
Under the new building code, permits are classed as Type 1-A, Type 1-B, Type 2, Type 3, Type 4, Type 5, and Alterations.

Flue Registrations and Permits

Flue Registrations	54	\$ 1,080.00
*Coupon Books - new buildings	119	1,487.50
** " " old "	17	340.00
Flue permits new "	41	20.50
" " old "	<u>104</u>	<u>208.00</u>
Totals	335	\$ 3,136.00

Miscellaneous Permits

To raze structures	69	\$ 725.00
To move buildings	62	1,024.00
Boiler installations	230	1,066.50
Boiler inspection requests	<u>1,099</u>	<u>4,415.50</u>
Totals	1,460	\$ 7,231.00
GRAND TOTALS	11,125	\$249,692.20

*New coupon books contain
25 prepaid coupons

**Old coupon books contain
10 prepaid coupons

BUREAU OF BUILDING INSPECTION

C. H. Potts, Acting Superintendent, June 5 to July 31

FUNCTIONS

The Bureau examines and reports on all applications for permits submitted to the Department of Public Works for new buildings, alterations to existing buildings, bill-boards and signs (electric and non-electric); inspects all this work as it progresses, makes final inspections and issues certificates of final completion when the work is finished. It cooperates in consultations with architects, engineers, contractors, and home owners in the preliminary stages of preparation of their plans, whether for new buildings or alterations to existing buildings. It reports on legislation affecting building matters and proposes new legislation as required.

PERSONNEL

The personnel of the bureau as of June 30, 1948 consists of the following classifications:

- 1 Superintendent (Acting)
- 3 Structural Engineers
- 18 Building Inspectors (one
acting as Superintendent)
- 2 Boiler Inspectors
- 3 Clerk Stenographers

PERSONNEL LOSSES

In February 1948 the Bureau of Building Inspection lost the services, by resignation, of Mr. John G. Little who had occupied the position of Superintendent of Building Inspection for eleven years. Mr. Little left our organization to become Consulting Engineer for the Golden Gate Bridge and to open his own office as a Consulting Engineer. The Department of Public Works regrets this loss, and will miss Mr. Little.

Since Mr. Little's resignation on February 1, 1948 the Department has been awaiting a replacement by the Civil Service Commission. Meantime the work was carried on by Mr. George Marsh

as Acting Superintendent, and subsequently by Mr. C. H. Potts as Acting Superintendent. This delay in appointing a permanent head has thrown additional work on the office of the Director for a period of seven months. We are informed by the Civil Service Commission Secretary that this appointment will be made in September.

Felix H. Spitzer, Structural Engineer, and George S. Hill, Structural Engineer, both retired on December 31, 1947.

EQUIPMENT

21 Passenger automobiles

ORGANIZATION

Superintendent - In addition to performing the duties of his office, he takes an active part in the deliberations of various departments of the City government as well as other organizations with reference to matters of building construction, the building code and building safety.

Building Inspectors - One inspector, acting as assistant to the Superintendent, coordinates and directs the office and field work of the various structural engineers, inspectors and clerical force. He also makes general field inspections as well as representing the Director of Public Works before the Board of Permit Appeals. He assigns inspectors to various districts in the City, the size and area of which districts is determined by him.

One inspector checks all plans for new construction and estimates the cost thereof.

Fifteen inspectors are assigned to definite districts, into which the City is divided, and are charged with the responsibility for inspection of construction in their respective districts. This includes new construction of all types, alterations, night clubs, condemnations, bill-boards and signs. They report on all applications for construction in their districts prior to the issuance of

permits by the Central Permit Bureau, prepare and post Certificates of Final Completion, check and follow up complaints, interview property owners and appear before courts in matters of condemnation and prosecution.

Boiler Inspectors - The Boiler Section of this Bureau was instituted in 1933. Its purpose was to inspect the installation of all high and low-pressure boilers, air tanks, and directly and indirectly-fired hot water heaters. The installations were checked to see that they complied with the A.S.M.E. Code. An average of 88 inspections per month were made.

As a result of considerable study and many conferences, a new boiler ordinance was adopted and became effective on June 10, 1947. The inspection of high and low-pressure boilers with over four square feet of grate surface, and air-pressure receivers, is considered a safety asset to the public. Since this inspection ordinance became effective, many recommendations have been made to the owners for their protection. The number of inspections increased so that on July 16th the Director of Public Works approved the employment of one additional Boiler Inspector and one Clerk-Stenographer.

As this was a new ordinance, and the public having been familiar only with State inspection, considerable trouble was experienced in making inspections where State permits were still in force. In discussing the matter with the owners and explaining that the City had taken over these inspections for the purpose of rendering additional safety to the public, they agreed that it was a very good change, and inspections were then made without further trouble. Installation and internal inspections were made and some pressure vessels were condemned as unsafe to be used in the City and as dangerous to the citizens thereof.

At the present time, due to the numerous additional inspections required, this section has yet to make a complete inspection

of all of the low-pressure boilers coming under the ordinance as a majority are in service. Several communications have been received in reference to the new inspection ordinance commending the City for the part it has taken in promoting safety. This is said with no criticism meant toward the State inspections; however, their inspections were limited only to the plants where there were employees. After careful consideration, the City decided that pressure vessels are dangerous to a certain extent, no matter where installed; therefore, we inspect all pressure vessels irrespective of whether there are employees or not.

Structural Engineers - Check and report on all plans pertaining to structural engineering, make field inspections, follow up matters concerning structural safety brought to their attention by the district building inspectors and assist other bureaus and departments in structural matters.

The following structural engineers were given permanent appointments in the Bureau during the past year:

J. Skytte
Arthur T. Hauck
John C. Vandermev

Clerical Force - Takes care of all correspondence and files of the bureau and keeps records of all matters pertaining to the issuance of certificates of final completion.

BUILDING CONSTRUCTION

The volume of building construction for which permits have been issued has increased from \$36,844,405 for the fiscal year 1946-1947 to \$56,477,050 for this fiscal year. This has been reflected in all types of construction with particular emphasis on Type 5 buildings under which type is included residential construction. The shortage of materials has lessened and is reflected in the fact that where a year ago it took approximately a year to complete a dwelling it now takes approximately five months.

BUILDING CODE

The new building code, upon which so much work was done for over two years, became effective on September 11, 1947. This new code is a great change from the old code and the public, as well as ourselves, had to become familiar with it without delay. It has been in use for over nine months and some minor parts have been amended for purposes of clarification; however, many architects, engineers, and contractors have voiced their favorable comments in their use of this new code. Less trouble was experienced in the change to the new code than had been anticipated.

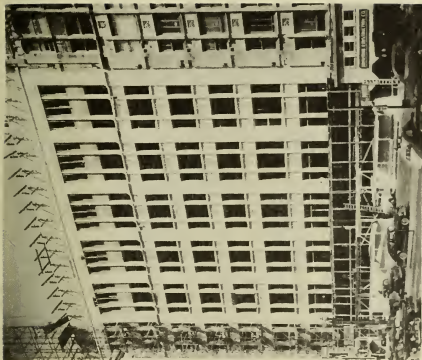
WORK DONE

The extent of routine operations of this Bureau for the fiscal year is set forth in the following tabulation taken from the records of the Central Permit Bureau:

<u>Type</u>	<u>Number of Permits</u>	<u>Cost</u>
1-A	13	\$ 8,929,400
1-B	15	2,250,000
2	0	-
3	59	2,801,377
4	21	231,208
5	3018	31,306,285
Alterations	<u>6157</u>	<u>10,958,780</u>
Totals	9283	\$56,477,050

The following statistics of monthly reports indicate volume of work done during the fiscal year:

Number of inspections reported by inspectors of buildings	60,316
Number of projects remaining on which permits have been issued that have not been reported completed by inspectors of buildings	3,901
Number of complaints that have been reported adjusted by inspectors of buildings	1,031
Number of inspections reported by inspectors of boilers	3,228
Number of projects remaining on which permits have been issued that have not been reported completed by inspectors of boilers	



Addition to Department Store
in Retail Business District



Telephone Building, 25th and Capp Sts.
New Exchange Building
(Steel work shown in report of 1946-47)

Number of complaints and requests for information recorded	123
Number of complaints and requests on which initial inspections have been reported	121
Number of applications for permits examined by and approved by structural engineers	4,706
Number of applications for permits pending	85
Miles traveled during the year by passenger cars on inspection service	115,770

The exterior face of this building consists of 4-ft. x 7 ft. precast concrete blocks 2 inches thick of 7,000 lb. concrete. The blocks were secured in their proper position and acted as exterior forms for the walls, the inner forms being plywood. When the concrete was poured these blocks became a definite part of the wall. Black aggregate was used, and exposed surfaces were given a high polish prior to delivery to the site.



Pacific Gas and Electric Company
(Extension to Hunters Point Plant)



Pacific Gas and Electric Company's new plant
See opposite page

BUREAU OF ARCHITECTURE
Dodge A. Riedy, City Architect

FUNCTIONS

The Bureau of Architecture prepares plans, specifications, and estimates for new construction, also alterations and repairs to public buildings on contracts in excess of \$2000. All architectural work for the Board of Education, Department of Health, Fire Department, Police Department, Sheriff, Public Welfare Department, Juvenile Court, Department of Electricity, and for all other property under the jurisdiction of the Department of Public Works, such as Repair Shops, Yards, City Hall, Hall of Justice, Civic Auditorium, California Palace of the Legion of Honor, and M.H.deYoung Memorial Museum, War Memorial Building, Juvenile Court, Library Commission, Law Library, also some work for the Water Department and the Park Commission, is handled by this department.

On major projects which the Bureau is not equipped to handle, architects are appointed for individual contracts and their work is under the direction and supervision of the City Architect.

PERSONNEL

The personnel of the bureau as of June 30, 1948, was:

- 1 City architect
- 1 Assistant City architect
- 4 Senior architectural draftsmen
- 1 Architectural draftsman
- 1 Supervising construction inspector
- 14 Building inspectors
- 4 Clerk-stenographers
- 1 Office assistant

WORK DONE

As in the past ten years, most of the work in the Bureau consisted of alterations, repairs, and maintenance of the buildings of the various departments. Architects and engineers were appointed and work is under progress on plans for a number of projects for the Board of Education, Fire Department, and Juvenile Court. For

the past few years the Bureau of Architecture has been handicapped by the shortage of technical help in the drafting room. The Civil Service Commission will soon hold examinations for Architectural Draftsman and Senior Architectural Draftsman which, it is hoped, will provide additional help.

During the past fiscal year, the value of the work engaged in was as follows:

Work completed	\$ 1,166,263.13	
Contracts under Construction and		
Work in Progress	1,006,571.68	
Work under Preparation	<u>13,053,674.38</u>	\$15,226,509.19

The segregation of this work by departments for which the work was done is shown in the following table; details of the class of work and the type of project will be found in Appendix II.

CURRENT DATA - SUMMARY

Showing all Work Completed, Contracts under Construction and Work in Progress, and Work under Preparation - July 1, 1947 to June 30, 1948.

Work Completed

Board of Education		
School Buildings (Miscellaneous)	\$ 485,978.39	
Interior Painting	135,787.11	
Exterior Painting	77,709.58	
Interior & Exterior Painting	21,197.34	
Roofing	<u>45,070.95</u>	\$ 765,743.37
Department of Health		
San Francisco Hospital	\$ 144,247.25	
Laguna Honda Home	14,511.00	
Miscellaneous	<u>7,156.30</u>	165,914.55
Fire Department		18,555.20
Police Department		80,210.50
City Hall		42,256.11
Civic Center		
City Planning Commission	\$22,085.78	
Auditorium	<u>2,239.00</u>	24,324.78
Sheriff		7,062.00
Juvenile Court		47,972.15
Miscellaneous		<u>14,224.47</u>
Sub-total		\$1,166,263.13

Contracts Under Construction & Work in Progress

Board of Education			
General	\$	92,473.00	
Prefabricated classrooms		181,275.77	
Roofing		<u>60,722.00</u>	\$ 334,470.77
Department of Health			
San Francisco Hospital		208,368.91	
Laguna Honda Home		73,440.70	
Miscellaneous		<u>28,440.74</u>	310,250.35
Fire Department			8,871.25
City Hall			79,321.00
Civic Center			
Auditorium	\$	70,293.31	
Retirement Board		4,945.00	
Main Library		6,588.00	
City Planning Commission		1,377.00	
Veterans' War Memorial Building		<u>117,389.00</u>	200,592.31
Park Department			70,076.00
Miscellaneous			<u>2,990.00</u>
	Sub-total		\$1,006,571.68

Work Under Preparation

Board of Education			
School Buildings	\$	6,060,411.38	
Prefabricated portable classrooms		<u>305,000.00</u>	6,365,411.38
Department of Health			
San Francisco Hospital		90,910.00	
Laguna Honda Home		<u>22,534.00</u>	113,444.00
Fire Department			1,271,000.00
Sunset Community Center			1,385,000.00
City Hall			51,620.00
Civic Center - Auditorium			50,000.00
Juvenile Court			2,957,911.00
Miscellaneous			<u>859,288.00</u>
	Sub-total		\$13,053,674.38
	Grand total		\$15,226,509.19



Typical temporary prefabricated 2-classroom building
Guadalupe School, Cordova and Prague Sts.

BUREAU OF SEWER REPAIR

Emile F. Muheim, Superintendent

The City and County of San Francisco is situated on the northern tip of a peninsula bounded on the west by the Pacific Ocean, on the north by the Golden Gate Strait and on the east by San Francisco Bay. Crowded into this 40-square-mile area live 827,000 people, plus 220,000 who work in San Francisco but live in other Bay Area communities.

The general topography of the city is hilly, the highest point being approximately 900 feet above sea level. Gravity, therefore, is relied upon to carry the sewage to the various outfalls. The drainage areas are predominantly north and east, discharging raw sewage into the bay. This practice of discharging raw sewage will soon be a thing of the past as plans and specifications are now complete for the construction of additional treatment plants. The western slope of the City discharges into a treatment plant.

The climate in San Francisco is moderate, with an annual rainfall of 22 inches most of which occurs between the months of November and March.

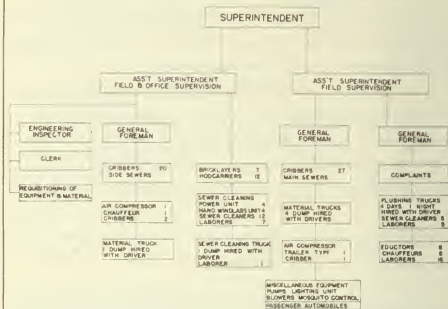
Most of the legal claims pending against the City and County of San Francisco in connection with the Bureau of Sewer Repair are of a minor nature. Many are under \$100 and consist generally of damage to automobiles, caused as a result of ignoring red lights and barricades, or due to running into holes in the street that have not been reported to the office. However, we have pending one property damage claim for \$10,000, and two personal injury claims for \$25,000 and \$12,500.

FUNCTIONS

The functions of the Bureau of Sewer Repair are to maintain and repair the sewage collection system, including manholes and

ORGANIZATION CHART

BUREAU OF SEWER REPAIR
DEPARTMENT OF PUBLIC WORKS
CITY & COUNTY OF SAN FRANCISCO



APPROVED BY *[Signature]*
DIRECTOR OF PUBLIC WORKS
JUNE 24, 1941

REVISED JUNE 20, 1944

catchbasins, and also to install and repair side sewers between mains and traps, the latter generally being placed two feet inside the curb line. The bureau cleans the sumps of all sewage pumping stations.

The sewage collection system consists of vitrified clay pipe, prefabricated reinforced concrete pipe, brick sewers, and monolithic reinforced concrete sewers. The larger sewers were formerly of brick or monolithic reinforced concrete, but the new installations include prefabricated reinforced concrete pipe up to 6'-9" in diameter. The vitrified clay pipe now being used is non-glazed.

PERSONNEL

The personnel of the Bureau as of June 30, 1948, consisting of 132 employees, was as follows:

1	Superintendent
2	Assistant superintendents
3	General foremen
1	Engineering inspector
1	Clerk
7	Bricklayers
12	Hodcarriers
50	Cribbers
29	Laborers
9	Chauffeurs
<u>17</u>	<u>Sewer cleaners</u>
132	Total personnel

ORGANIZATION

The Superintendent of the Bureau has two assistant superintendents who exercise direct supervision over three general foremen. The crews are employed eight hours per day, Monday through Friday, with a night shift on duty from 4:30 p.m. until 12:30 a.m.

On Saturdays, Sundays, and holidays, a maintenance truck is on duty taking care of current jobs. This truck is on call after hours every day in the year. An assistant superintendent or a general foreman is on call at his home at all hours of the day or night throughout the year.

EQUIPMENT

Owned by City	8 Elgin eductors
	1 Air compressor, mounted on truck
	1 Air compressor, trailer type
	4 Power-driven sewer cleaning units
	1 Pump, trailer type
	2 Pumps, portable
	1 Blower, portable
	1 Lighting unit, portable
	6 Passenger automobiles
	Power-driven flexible rod, windlasses, cables, buckets, wooden rods, hose, sewer lamps, flares, lanterns, barricades, belts, lines, gas masks, goggles, etc.
Contractual basis	6 Dump trucks
	5 Panel delivery trucks

ROUTINE OPERATIONS

A typical working day starts at about 7:00 a.m., when the general foremen arrive at the office to get the orders ready for the men arriving at 8:00 a.m. Before 8:00 a.m., many of the field crews ring in for material, additional instructions, or assignment to a new location. At 8:00 a.m., the eductor crews are dispatched to their regular districts or go on special assignments. Flushing crews go out on complaints, investigations, or their regular sewer maintenance. At 10:00 a.m., these men ring in for further instructions. In general, this routine is repeated in the afternoon.

During the day, the clerk answers telephone calls from citizens reporting holes in the street, plugged-up catch-basins, sewers not functioning, and articles dropped into catch-basins or through the plumbing fixtures, such as keys, rings, false teeth, and precious stones. Many of these articles are retrieved and returned to their owners.

At 4:45 p.m., the eductor and flushing crews report to the office with the results of the day's work. These reports are tabulated and distributed to the assistant superintendent or general foreman responsible for that particular phase of the work. By this

time, the night crew has reported and their instructions have been issued. Five o'clock sees the day officially closed. Complaints coming in after this hour and up until 12:30 a.m. are taken care of by the night crew. After 12:30 a.m. and until 8:00 a.m. the following morning, the material truck driver is on call for routine complaints. Complaints of a more serious nature are referred to the assistant superintendent or general foreman on call.

NUMBER OF JCBS

Complaints investigated	8,276
Repairing pipe sewers	481
Repairing and installing side sewers	1,449
Repairing brick sewers	149
Building manholes	17
Repairing manholes	99
Building catch-basins	10
Repairing catch-basins	205
Catch-basins cleaned by eductors	10,476
Cubic yards of silt removed from ..	
catch-basins by eductors	11,466
Catch-basins cleaned by hand	187
Cubic yards of silt removed from	
catch-basins by hand	155
Cubic yards of silt removed from	
sewers	1,858

Man equipped to work in sewer: helmet with miner's electric lamp, leather safety belt with rope, rubber boots, and sack to protect clothing when going down manhole. White belt carries storage battery for cap lamp.

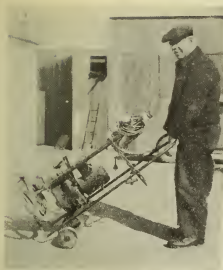
All underground equipment approved by U. S. Bureau of Mines.



REPAIRS TO MAIN SEWERS - 1947-48

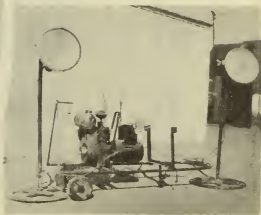
SUMMARY OF COSTS

	<u>Labor</u>	<u>Material</u>	<u>Trucks</u>	<u>Spec. Equip.</u>	<u>Auto</u>	<u>Total</u>
Repairs to pipe sewers	\$103,543.61	\$15,424.72	\$11,198.30			\$130,166.63
Repairs to brick sewers	39,250.66	3,453.63	1,893.45			44,597.74
Building manholes & catch-basins	10,919.73	2,651.11	1,117.52			14,688.36
Repairs to manholes	7,357.00	2,674.21	504.03			10,535.24
Repairs to catch-basins	15,921.34	2,613.59	1,384.77			19,919.70
Repairs to concrete sewers	1,645.60	101.16	71.76			1,818.52
Eductors	85,299.83	8,668.60	5,282.37			99,250.80
Sewer flushing	48,062.83	2,529.55	25,083.15			75,675.53
Sewer cleaning	56,033.90	3,959.45	4,879.98			64,873.33
Hand cleaning catch-basins	3,433.36	90.68	413.05			3,937.09
Miscellaneous	14,125.09	1,132.42	4,202.02			19,559.53
NORMAL EXPENDITURES	\$385,592.95	\$43,299.12	\$56,030.40			\$484,922.47
Special sewer cleaning equipment				\$2,698.51		2,698.51
One Ford 6-cylinder sedans					\$761.05	761.05
TOTAL EXPENDITURES	\$385,592.95	\$43,299.12	\$56,030.40	\$2,698.51	\$761.05	\$488,382.03



Portable lighting
unit for emergency
night jobs. Operated
by gas engine and
generator

Unit set up



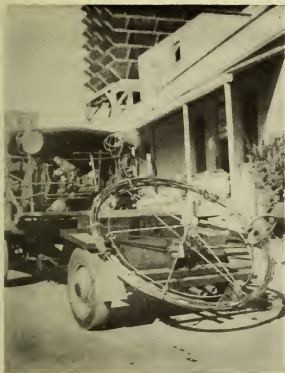
Street scene
Lights and pump

SIDE SEWERS INSTALLED AND REPAIRED - 1947-48SUMMARY OF COSTS

No. S/S	Deposit	Labor	Matl.	Cartage	Insptn.	Paving	Extras	Over- head	Total	Refund	Excess
Jul 81	\$10940.00	\$6039.20	\$473.75	\$294.00	\$156.00	\$1851.85	\$305.63	\$1140.05	\$10260.48	\$1602.38	\$922.86
Aug 100	11010.00	5378.85	568.05	335.00	198.00	2031.75	137.78	1081.18	9730.61	1776.96	497.57
Sep 105	13477.00	6302.45	709.80	344.00	200.00	2379.75	230.36	1270.80	11437.16	2468.43	428.59
Oct 113	15205.00	6943.71	715.40	422.88	214.00	2940.00	318.98	1608.41	13163.38	2663.82	622.20
Nov 120	14680.00	6937.65	814.10	435.00	230.00	3267.75	272.11	1793.49	13750.10	1850.06	920.16
Dec 145	16015.00	6886.73	978.25	490.55	284.00	3792.75	188.70	1893.14	14514.12	1957.34	456.46
Jan 132	16750.00	7397.91	863.10	478.00	260.00	3601.50	259.54	1929.16	14790.21	2575.52	614.73
Feb 120	15415.00	6846.00	730.10	438.00	214.00	2964.75	200.74	1709.04	13102.63	2944.38	632.01
Mar 140	18560.00	7953.57	933.10	472.00	254.00	3690.00	263.38	2034.90	15600.95	3408.02	448.97
Apr 132	16975.00	6884.41	785.75	468.00	248.00	3074.25	703.33	1824.57	13988.31	3402.28	415.59
May 124	16664.00	6256.52	716.80	464.00	226.00	2660.25	359.06	1615.60	12386.23*	4461.75	183.98
Jun 137	18695.00	6376.08	725.20	453.00	220.00	2840.25	232.24	1651.45	12661.22 ^o	6284.48	250.70
1449	184386.00	80203.08	9013.40	5094.43	2704.00	35094.85	3471.85	19551.79	155384.40	35395.42	6393.82

*Includes \$88. compressor charge.

^oIncludes \$163. compressor charge.



350-ft. flexible sewer rod on trailer attached to truck with emergency equipment and lighting



Self-contained gas engine feeding flexible sewer rod through pipe into clogged sewer. Rod progress is due to twisting motion which makes head of rod act as auger

BUREAU OF STREETS

P. W. King, General Superintendent

The Bureau of Streets is responsible for the maintenance, repair and cleaning of all streets and boulevards, including State Highways within the City and County of San Francisco, except those streets abutting the water-front and which are under the jurisdiction of the State Board of Harbor Commissioners as established by the statutes of the Legislature of the State of California. The work includes the maintenance and repair of wooden and concrete stairways including the pipe railings which are part of the street in hilly regions. It is also responsible for the operation and maintenance of bridges at Third Street and Channel, Fourth Street and Channel, and Third Street and Islais Creek.

The Bureau is divided into two divisions: Street Repair and Street Cleaning. Operations of each division will be presented separately.

DIVISION OF STREET REPAIRFUNCTIONS

Many worn-out street surfaces were repaved with an asphalt-wearing surface. Minor repairs were made to brick, basalt block, and concrete pavements. Sidewalks were reconstructed at corners and concrete curbs reset. Some granite curbs in the industrial and commercial districts were redressed and reset.

Street pavements had become unsightly due to cracks developing in the wearing surface. In some cases the crack had become so wide and the "lips" along the edge of the crack so high that a strip about eight inches wide was entirely cut out and the space filled with fine gravel and emulsified asphalt.

Surface heaters were used for heating the asphalt on streets where it became necessary to remove rolls, and then sheet asphalt surface was placed after the burned pavement was raked off.

No planing of bituminous surfaces was done during the past fiscal year.

This division resurfaces the track area for the Municipal Street Railway System, operates the City Asphalt Plant and the bridges, removes fallen trees from streets after storms, clears away landslides and removes sand from the streets in sections of the City where the property has not been built upon.

PERSONNEL

The personnel as of June 30, 1948, was as follows:

Supervising	1 General superintendent (also in charge of Street Cleaning Division)
	1 Supervisor
	3 General foremen
Per Diem	1 Foreman - Asphalt finisher
	9 Sub-foremen - Asphalt finishers
	15 Asphalt finishers
	26 Asphalt workers
	3 Labor foremen
	47 Laborers (inclu. pneumatic tool operators)
	22 Chauffeurs
	4 Granite cutters
	3 Cement finishers
	4 Cement finishers' helpers
	2 Pavers
	3 H & P Engineers
	1 Caterpillar operator
Municipal Asphalt Plant	1 Foreman
	1 Dryerman
	1 Mixerman
	1 Laborer
	2 Asphalt workers
	1 Engineer
	1 Laborer (Night watchman for boilers)
Bridges	1 Chief operating engineer ($\frac{1}{2}$ time bridges, $\frac{1}{2}$ time buildings)
	9 Operating engineers (3 at each bridge)
	1 Operating engineer (relief)
	9 Watchmen (3 at each bridge)
	1 Watchman (relief)

ORGANIZATION

Supervising	1 General superintendent
	1 Supervisor
	3 General foremen
Municipal Railway work	2 Sub-foremen asphalt finishers
	2 Asphalt finishers
	5 Asphalt workers

Municipal Railway work (continued)	3	Pneumatic tool operators
	5	Laborers
	2	Chauffeurs
	1	Portable compressor
Crack sealing	2	Sub-foremen asphalt finishers
	1	Asphalt finisher
	3	Pneumatic tool operators
	13	Laborers
Asphalt repairs	3	Chauffeurs
	1	Foreman asphalt finisher
	5	Sub-foremen asphalt finishers
	12	Asphalt finishers
	21	Asphalt workers
	3	H & P Engineers
	10	Chauffeurs
Brick and basalt block repairs	2	Pavers
Broken and depressed curbs	1	Granite cutter
	2	Laborers
Dressing curbs	3	Granite cutters
Sidewalks and angular corners	3	Cement finishers
	4	Cement finishers' helpers
	1	Chauffeur
Clean-up	3	Labor foreman
	13	Laborers
	3	Chauffeurs
Yards	2	Laborers
Lights and barri- cades	1	Truck driver
Compressor units	3	Chauffeurs
	6	Gunmen



Assembled crack sealing equipment

Equipment

- 19 4-cu.yd. Dump trucks
 - 1 ½-cu.yd. Body - Dodge (obsolete)
 - 1 Low-bed curb truck - Doane
 - 3 ½-ton Pick-up trucks - Chevrolet
 - 1 ¾-ton Pick-up truck - International
 - 1 8-ton Gas roller - Austin Western (to be sold)
 - 1 8-ton Gas roller - Galion
 - 2 5-ton Gas rollers - Galion
 - 2 3-ton Trailer rollers - Littleford
 - 1 #60 Tractor - McCormick-Deering
 - 1 Sand loader
 - 2 Surface heaters - power-driven
 - 1 Surface heater - hand operated
 - 4 200-gal. Bitumuls spray machines - Littleford
 - 1 100-gal. Bitumuls spray machine - Littleford
 - 3 105 cu.ft. Compressors, mounted on ½-ton chassis
 - 1 105 cu.ft. Compressor, mounted on portable trailer
 - 1 1937 Sedan - Plymouth
 - 1 1938 Coupe - DeSoto (to be traded in)
 - 2 1941 Coupes - Chevrolet
 - 1 1947 6-cyl. Coupe - Ford
 - 1 1947 8-cyl. Coupe - Ford
 - Miscellaneous small equipment
- 9 Hired trucks

The work of repairing asphalt pavements and crack sealing of pavements was city-wide and is not enumerated as to locations.

The work of removing basalt and brick headers, shimming up the track and resurfacing the track area was done for the Municipal Railway System on the following streets:

Balboa Street	33d Avenue	to	45th Avenue
33d Avenue	Geary Street	to	Balboa Street
California Street	Presidio Ave.	to	33d Avenue
Clement Street	Arguello Blvd.	to	33d Avenue
Mission Street	8th Street	to	11th Street
" "	14th Street	to	16th Street
Turk Street	Market Street	to	Divisadero Street
Eddy Street	" "	to	" "
Ellis Street	" "	to	" "
O'Farrell Street	" "	to	" "

The roads at the Hassler Health Farm in San Mateo County were repaired with emulsified asphalt; poison oak was eradicated at all places on the property.

A temporary pavement was constructed at the Farmers' Market.

The total expenditures of the Division for the fiscal year 1947-48 were \$1,033,547.65, consisting of four main items, to wit:

Bridges	\$ 100,086.02
Asphalt Plant	109,287.13
Interdepartmental services	263,091.05
General Repairs	<u>561,083.45</u>
	\$1,033,547.65



Latest Austin Gutter Sweeper
with spray attachment

STATISTICAL DATA

Cost of Operating Bridges

<u>1947</u>	<u>Third St.</u>	<u>Fourth St.</u>	<u>Islais Creek</u>	<u>Sixth St.</u>	<u>Totals</u>
July	\$ 2,647.05	\$ 2,951.35	\$ 2,421.35		\$ 8,019.75
August	2,729.88	2,534.02	2,466.42		7,730.32
September	3,077.13	2,928.59	2,575.01		8,580.73
October	2,834.10	2,982.39	3,162.14		8,978.63
November	2,782.14	2,686.15	2,536.96		8,005.25
December	2,633.21	2,593.16	2,602.79	\$54.61	7,883.77
<u>1948</u>					
January	2,619.37	2,588.30	3,511.70		8,719.37
February	3,335.06	2,961.47	4,023.67		10,320.20
March	2,551.66	2,495.16	2,332.24		7,379.06
April	2,531.83	2,824.12	2,283.72		7,639.67
May	2,823.32	2,813.62	2,386.55		8,023.49
June	3,316.59	3,064.09	2,425.90		8,806.58
	<u>\$33,881.34</u>	<u>\$33,422.42</u>	<u>\$32,728.45</u>	<u>\$54.61</u>	<u>\$100,086.82</u>

Cost of Operating Municipal Asphalt Plant

	<u>Output (Tons)</u>	<u>Cost of Labor and Materials</u>	<u>Cost Per ton</u>
<u>1947</u>			
July	1,033.90	\$ 5,302.28	\$ 5.128
August	2,202.15	8,405.02	3.817
September	2,006.40	7,911.73	3.943
October	2,470.70	9,403.61	3.806
November	2,657.95	9,137.47	3.438
December	3,395.90	11,101.08	3.269
<u>1948</u>			
January	3,269.70	10,529.52	3.22
February	2,294.60	7,999.24	3.49
March	2,437.60	9,152.49	3.75
April	2,646.70	9,190.87	3.47
May	2,805.70	9,576.71	3.41
June	<u>3,667.10</u>	<u>11,577.11</u>	<u>3.16</u>
	30,888.40	\$109,287.13	\$ 3.66*

*Average cost per ton for 12 month period.

Note: During July, the plant was shut down for two weeks for repairs. If we eliminate July and take the next 11 months, we will get a fairer average cost per ton - \$3.52.

Interdepartmental Work

Major streets, paving	526,424 sq.ft.	} \$	64,945.51
" crack sealing	370,094 lin.ft.		
Side sewers, paving & cleanup	47,231 sq.ft.		37,142.71
Municipal Railway, paving	772,084 sq.ft.	}	141,603.20
" crack sealing	1,025 lin.ft.		
State Highway #2, paving	24,199 sq.ft.	}	3,719.24
" crack sealing	65,100 lin.ft.		
" " #55, paving	1,864 sq.ft.	}	470.99
" " #56, paving	16,002 sq.ft.		
" crack sealing	27,200 lin.ft.	}	1,087.32
" #68, paving	8,975 sq.ft.		
Park Department, paving	25,935 sq.ft.		1,919.86
" equipment rental			201.50
Public Works, paving	3,033 sq.ft.		971.80
" paving & other services	230 sq.ft.		2,476.64
Sealer of Weights & Measures, paving	29,210 sq.ft.		3,145.57
Farmers' Market, reset posts			19.40
Hassler Health Farm, paving	23,700 sq.ft.		1,047.67
San Francisco College, paving	6,400 sq.ft.	}	521.38
" crack sealing	8,300 lin.ft.		
Police Department, Pistol Range			
paving	15,500 sq.ft.		1,010.99
Controller, services			176.40
			<u>\$263,091.05</u>



Surface Heater
used to burn asphalt off streets

General Repairs to Streets

	<u>Area</u>	<u>Cost</u>
Asphalt repairs	2,274,216 sq.ft.	\$ 220,035.31
Basalt repairs	239 sq.ft.	135.28
Brick pavement repairs	7,622 sq.ft.	7,134.01
Concrete pavement repairs	11,867 sq.ft.	9,362.50
Crack sealing	2,544,490 lin.ft.	59,877.21
Granite curb redressed	5,411 lin.ft.	10,878.27
Granite curb reset	8,307 lin.ft.	20,315.17
Concrete curb reset	9,671 lin.ft.	14,147.42
Main sewers - paving	30,338 sq.ft.	18,873.97
Sidewalks	48,407 sq.ft.	25,694.53
Temporary roads		7,493.13
Fire Department - Paving	852 sq.ft.	409.47
Department of Electricity - Paving	1,435 sq.ft.	816.26
Removal of granite curb	2,011 lin.ft.	604.66
Setting duck bumps	42	431.62
Safety zone (Mission and Acton)		587.88
*Miscellaneous work		45,425.66

Other Expense

Major repairs to Asphalt Plant	1,095.82
20-ton platform scale (Asphalt Plant)	4,735.00
Work performed by other departments	38,018.88
Miscellaneous purchases	10,074.76
Equipment purchases	<u>64,936.64</u>
	<u>\$561,083.45</u>

*Miscellaneous work covers the cartage of equipment, removal of sand in Sunset and Parkside Districts, removal of trees and debris after storms, cleaning up slides, repairing various stairways and structures, cleaning and repairing various spillways, etc.

DIVISION OF STREET CLEANING

The Division is still short of automotive equipment, and request has been made in the 1948-49 budget for 11 new trucks of 11-3/4 cu. yd. capacity to replace those that are so small (5 cu. yds.) and obsolete that they are not economical to operate or repair. The moneys requested for material and supplies in the last fiscal year were not sufficient due to the continual increases in prices and the fact that vendors would not make bids for the whole year.

The problem of securing street cans is still difficult on account of scarcity of metal, and the prices. Many discarded school cans have been purchased from the Board of Education and repaired in the City Sheet Metal Shop at a cost of over one-half that of new ones. In the budget for 1948-49, there is a request for \$7,500 for new cans as many of the 1400 which we have are in bad shape. The use of 121 street can sheds, each of which stores 6 cans, has permitted a more efficient operation and has greatly reduced street garbage and refuse. It is desirable to extend this program, and money for 10 additional can sheds has been requested in the next budget.

There are approximately 110 street buggies used in the blockman service. When in need of repair, the buggies are being converted into 3-wheel units with shorter handle space, eliminating the attached buggy pan, the blockman using a hand scoop instead. The buggy is thus more compact and sightly and easier to handle.

Wire baskets were placed in the downtown district for pedestrian use several years ago; of the 40 originally placed, there are only 18 left, the balance having disappeared. Many more trash containers should be installed; one called the "Smithson Trash Receptacle," and costing \$39.50 per receptacle, is very neat appearing and serviceable.

The work of the division could be greatly reduced if there

were a greater degree of cooperation from other agencies and the general public.

Contractors spill dirt and refuse from their trucks onto the street; the general public uses outlying streets and vacant lots for garbage and as refuse depositories. Daily and weekly publications and various advertising mediums leave their wrappings and copies to be blown about by our regular winds which adds to the work of this division. Neither the inspectors of street work, nor the police or health departments seem able to enforce the various laws concerning the littering of streets with garbage, refuse and papers. There has been some improvement by the garbage companies in covering their trucks, and they have promised to use more trucks and smaller loads in the handling of paper in the financial district, but this, so far, has been only a promise and not carried out.

FUNCTIONS

The Division is responsible for the sanitation and cleaning of approximately 1600 curb miles of paved streets, five pedestrian underpasses, Stockton Street tunnel, numerous pedestrian stair and passage-ways as well as vacant City-owned lots in built-up sections of the City. There are also numerous cleaning jobs occurring continuously.

All of the street sweepings and debris collected is hauled to the two dumping grounds, one located at Alemany Boulevard and Orizaba Avenue, the other at Davidson Avenue and Jennings Street, where they are disposed of by the fill and cover method.

Dumped garbage and refuse which the division was forced to pick up was, until September 26, 1947, delivered to the garbage ramp at 6th and 16th Streets, but since that date it must be hauled to the sanitary fill at Bayshore.

PERSONNEL

The personnel as of June 30, 1948 was as follows:

Supervisory	1 General Superintendent (also in charge of Division of Street Repair)
	1 Supervisor
	4 District Directors
Per diem	12 Labor sub-foremen
	46 Chauffeurs
	1 Gardener
	262 Laborers (including 132 blockmen)

ORGANIZATION

The regular work week is five days, or 40 hours a week, and the night shift. Saturday from 6 a.m. to 10 a.m. and 1 p.m. to 5 p.m., and Sunday from 6 a.m. to 10 a.m., there are skeleton crews covering the main business sections of the City.

The City is divided into four major districts, each under a district director. The districts are divided into sub-districts which are swept by gangs and truck crews under the supervision of labor sub-foremen. The localities requiring daily or near daily service are swept by 132 blockmen.

OPERATIONS

	<u>Five days</u> <u>& nights</u>	<u>Saturday</u> <u>a. m.</u>	<u>Saturday</u> <u>p. m.</u>	<u>Sunday</u> <u>a. m.</u>
Blockmen	127	27	15	30
Sweeping gangs	11			
Can truck routes	5	1	1	3
Utility truck routes	5	1		
Paper truck routes	11			
Motor flusher routes	7	1	1	1
Motor sweeper routes	6	1		1

During the regular five day and night work, the Division uses 132 blockmen, 11 sweeping gangs, and uses 5 trucks on the 5 can routes, 11 trucks on the 11 gang routes, 5 trucks on the 5 utility routes, 11 trucks on the 11 paper routes, 6 motor flushers on the 7 routes, and 9 sweepers on the 6 routes. One motor flusher and one motor sweeper are used in night operations. On Saturday morning 27 blockmen, 1 can truck, 1 utility truck, 1 motor flusher,

and 1 motor sweeper are used. On Saturday afternoon 15 blockmen, 1 can truck, and 1 motor flusher are used. On Sunday morning, 30 blockmen, 3 can trucks, 1 motor flusher, and 1 motor sweeper are used.

Three garages are in advantageously chosen locations: 11th and Bryant Streets; 1725 Lombard Street, and 2350-19th Avenue (Sunset District). The garage on 19th Avenue cannot be used to house our mechanical loader trucks until the doors have been changed and to date we have been unable to secure the necessary alterations.

The cost of operating the division including labor, materials, and equipment for the fiscal year 1947-48 was \$1,057,848.

Equipment

- 6 Trucks - Leach body mechanical loaders -
13½ cu. yds. capacity
- 2 Trucks - Heil Load Packer -
13½ cu. yds. capacity
- 26 Dump trucks - varying capacities, 5 cu.yds.
to 13½ cu.yds.
- 3 Flat bed rack trucks
- 4 Standard Elgin motor sweepers
- 1 Standard Austin motor sweeper
- 4 Austin Patrol motor sweepers
- 6 Motor flushers
- 110 Street buggies
- 1400 Street cans
- 121 Can sheds
- 18 Wire baskets

Equipment on Order

- 1 Motor flusher - 2500 gallon capacity

Obsolete Equipment which should be Retired

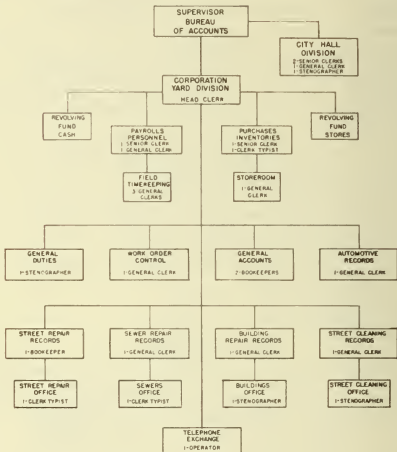
(Included in previous list)

- 2 Trucks - 1925 Pageols - 5 cu.yds. capacity
 - 2 Trucks - 1925 Kleibers - 5 cu.yds. capacity
 - 4 Trucks - 1928 Kleibers - 5 cu.yds. capacity
 - 3 Trucks - 1930 Macks - 5 cu.yds. capacity
 - 1 Motor sweeper, 1934 Austin
 - 1 " " 1935 Elgin
 - 1 " " 1936 Elgin
 - 1 " " 1937 Elgin
 - 1 " flusher, 1924 Kleiber
- The life of these is
presumed to be seven
years.

Equipment Requested 1948-49

- 11 Trucks - 11-3/4 cu.yds. capacity
 - 4 Motor Sweepers, Austin medium (new type)
 - 1 Motor flusher, 2500 gallon capacity (replacement)
 - 3 " flushers, " " "
 - 3 " replacements for trucks & other equipment
 - 10 Street can sheds
- \$7500 for street cans

ORGANIZATION CHART
BUREAU OF ACCOUNTS
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO
1947-48



PERSONNEL

SUPERVISOR	1
HEAD CLERK	1
SENIOR CLERKS	4
GENERAL CLERKS	11
BOOKKEEPERS	3
STENOGRAPHERS	4
TYPISTS	3
TELEPHONE OPERATORS	1
TOTAL	28

BUREAU OF ACCOUNTS

F. W. McKenzie, Supervisor

FUNCTIONS

The Bureau of Accounts controls the budgetary and financial activities of the Department. It is the point of origin of documents dealing with the disbursement of funds, and their guidance through required procedures until final liquidation.

The operating functions of the Bureau embrace control of payroll procedure, personnel records and field-timekeeping; purchase order requisitions, sub-storeroom and inventories; automotive expenditures and gasoline and tire records; work order job costs and invoicing; side sewer job and refund accounts; State gas tax subventions; the cash revolving fund for the Department; the stores revolving fund; budget preparation and control; operations of the Corporation Yard telephone exchange; and the supplying of clerical service to all Bureaus of the corporation yard.

Reports to the Director of operations in Building Repair, Sewers, Street Repair and Street Cleaning are prepared monthly by the Bureau of Accounts from the records maintained in the Bureau.

Job costs pertaining to property of the City, damaged by outside causes and falling within the scope of the department's control, are compiled and forwarded for collection.

PERSONNEL

The personnel of the Bureau as of June 30, 1948, consisting of 28 employees, was as follows:

- 1 Supervisor in charge of the Bureau
- 1 Head clerk
- 3 Bookkeepers
- 4 Senior clerks
- 11 General clerks
- 4 General clerk-stenographers
- 3 General clerk-typists
- 1 Telephone operator

ORGANIZATION

The Bureau has a central office at the City Hall and a division handling operating accounts at the Corporation Yard where the greater number of employees are assigned.

The general functions of the bureau include three well-defined subdivisions as:

Payroll and Personnel with 2 senior clerks and 5 assistants. Three general clerks act as field-timekeepers for payroll verification and also act as paymasters on semi-monthly pay-days, delivering pay warrants to employees on the job.

Purchasing and Stores with 1 senior clerk and 2 assistants.

Gas Tax Subventions with 1 senior clerk and 2 assistants.

OPERATIONS

A sub-storeroom and a material yard are operated for the varied activities of the department. The Stores Revolving Fund of \$60,000, under the control of the Bureau, is designed to permit the purchase in advance of constantly-used materials. Plumbing supplies, electrical items, paints, hardware, lumber, glass, tools, sewer pipe, brick, cement, castings, and miscellaneous needs which can be foreseen, are in stores and charged out to the various branches of the work as used. Controls have been established which facilitate monthly reimbursements for goods withdrawn, and stores' records are maintained on a perpetual inventory basis subject to annual physical check.

The Departmental Cash Revolving Fund of \$1,500 is used by the Bureau for payment of small bills and transportation charges, and enables workmen on jobbing operations to make cash purchases at neighborhood stores, thus avoiding trips to downtown establishments. All transactions are conducted under controls set up by Ordinance.

Detailed records are maintained of all expenditures, particularly of operations performed under work order procedure. In

these, the Charter requires that all elements of indirect and supervisory costs be considered and made part of the final job cost. To accomplish this, indirect labor is pro-rated on an exact percentage basis, as are overhead charges for accident compensation, sick leave, vacation, retirement and miscellaneous. These items of overhead are accumulated in reserves to meet the requirements designated. Charges for small tools and shop supplies used in work order operations are placed against the miscellaneous reserve.

The Collier-Burns Highway Act of 1947 amplified the accounting relating to gas tax subventions received from the State. Under the provisions of the Act the amounts received have been trebled. Effective also are requirements for reporting of expenditures in greater detail and under more explicit time limitations.

WORK DONE

The Bureau compiled and forwarded for collection, bills in 119 cases in the amount of \$5,195.03, covering damages to structures under the control of the Department, such as bridges, automotive equipment, street structures, traffic signals, as well as prisoner-damage to police stations; 998 individual deposits were filed by property owners, in the amount of \$184,405.83, for side sewer installations and repairs on 1,449 separate house connections; 20,438 transactions were handled involving the delivery of materials from the sub-storeroom and material yard to the jobs; 4,000 requisitions and 5,283 delivery orders were issued to vendors. The number of orders, etc. issued increased about 30% over that of the previous fiscal year, and the monetary value of work handled increased 28%, with an increase in personnel of one employee, or 4%.

STATISTICAL DATABudgeted funds subject to control
and appropriated to -

Bureau of Accounts	\$ 53,631.00	
Bureau of Architecture	279,913.00	
Bureau of Building Inspection	133,381.00	
Bureau of Building Repair	694,696.00	
Central Permit Bureau	25,427.00	
Bureau of Engineering	597,978.00	
Sewage Disposal Plant	127,639.00	
Sewage Pumping Stations	50,988.00	
General Office	70,680.00	
Bureau of Sewer Repair	589,341.00	
Bureau of Streets -		
Street Repair	673,007.00	
Street Cleaning	1,158,258.00	
Bridges	106,602.00	
Gas Tax (Special Road Improvement)	316,980.00	
Special Gas Tax-Street Improvement Fund	921,700.00	
Gas Tax - Street Construction	<u>933,645.00</u>	
		\$ 6,733,866.00

Interdepartmental service under work
order procedure for the following
divisions of the City government:

Schools	\$ 527,395.00	
Health	123,699.28	
Recreation	28,161.77	
Library	11,730.05	
Public Building Improvements	85,656.49	
Gas Tax Accounts	1,122,361.92	
Engineering	12,327.79	
Sewage Plants	35,000.00	
Public Utilities	351,624.07	
General Office	24,716.81	
Sewer Bonds	823,641.96	
Street Bonds	110,810.80	
Public Welfare	14,502.06	
Fire Department	13,733.68	
Miscellaneous	<u>263,686.58</u>	
		3,549,048.26

Side sewer installations and
repair expenditures184,405.83

TOTAL transactions for the year

\$10,467,320.09

BUREAU OF BUILDING REPAIR
R. A. Chisholm, Superintendent

FUNCTIONS

This Bureau is primarily a maintenance and repair organization and does not undertake any major construction. The main objective is to give service to all City departments asking for it, and to date we have succeeded without any major complaints.

The Bureau furnishes labor and materials for the repair, alterations, and painting of City-owned buildings that are under the control of the Director of Works. It performs similar services for the Board of Education and other municipal departments under work order procedure.

It furnishes labor and material for traffic striping, pedestrian lane markings at street intersections, and markings for loading and parking zones on curbs, bus stop and safety zones.

The Bureau, in addition to the above, furnishes personnel for the operation of the City Hall, Hall of Justice, Health Center Building, Emergency Hospitals, Police Stations, and Fire Houses, and is also responsible for the operation of the Civic Center Power House which furnishes heat to the Civic Auditorium, Public Library, Health Center Building, and City Hall.

PERSONNEL

The personnel includes one superintendent, one assistant superintendent and seven general foremen supervising 160 to 164 mechanics, supplemented by additional seasonal workers representing 13 building crafts, employed in repairs and alterations, and 106 employed in the operational work.

The classification of employees is:

<u>Repairs:</u>	1 Superintendent
	1 Assistant superintendent
	7 General foremen
	27 Plumbers
	14 Steamfitters
	12 Sheet metal workers

Bureau of Building Repair

- 16 Electricians
- 40 Painters
- 13-15 Cement finishers and cement workers
- 25 Carpenters
- 4 Locksmiths
- 4 Glaziers
- 2 Plasterers
- 1 Tile setter
- 2-4 Bricklayers
- Additional seasonal workers

Operational:

- 2 Chief operating engineers
- 7 Operating engineers
- 5 Junior operating engineers
- 16 Elevator operators
- 1 Supervisor of janitors
- 5 Foreman janitors
- 58 Janitors
- 2 Janitresses
- 7 Window cleaners
- 3 Watchmen

ORGANIZATIONPlumbing Division - 27 men

There are 8 to 10 men on regular assignments to the Fire Department, City Hall, San Francisco Hospital, County Jail #2, Hall of Justice and Laguna Honda Home; and at different times during the day, it is necessary to send additional men to take care of emergency calls. Miscellaneous repairs to toilet facilities etc. in school buildings, require 6 to 8 men. On work orders for repairs and new installation of plumbing facilities, from 6 to 8 men are constantly employed; but due to labor and material shortage, we are not up to date in this work. The Recreation Department keeps two men, with a truck, busy every day just taking care of emergency calls. In connection with the Bayshore Freeway and the Army Street Widening projects, the City has acquired a group of buildings which it is obliged to keep in repairs; and this is done on work orders from the Real Estate Department. We are constantly sending out not only plumbers, but electricians, locksmiths, steamfitters and sheet metal mechanics in an effort to keep these tenants happy. Calls from the Emergency Hospitals, Health Building, and Women's Jail Quarters receive priority over other calls. With the

addition of two panel-body trucks, we have been able to catch up on a large backlog of work orders.

Steam Division - 14 men

Four men are regularly assigned to the City Hall, Hall of Justice, Laguna Honda Home and San Francisco Hospital. The Board of Education keeps 3 or 4 men busy on emergency repairs at all times; others are engaged on special work orders for renewal of steam lines, traps, and vacuum equipment. The steam lines around the City Hall area need to be serviced and repaired at least once a year. The Municipal Railway, Fire Department, Emergency Hospitals, Public Welfare Department, and Real Estate Department keep the rest of the crew steadily employed.

Because of the enlargement of the offices of the Municipal Railway during the past year, we installed at the Geary Street car-barn a new Kewanee large size heating boiler and all appliances necessary to convert from fuel oil to natural gas. We added additional heat to several of our school buildings and are at present time installing a new oil burning system including new oil pumps and all piping necessary for the same. This job was created as emergency work so that there would be no loss of time to the students and the Board of Education.

Sheet Metal Division - 12 men

The Bureau does not assign the men of this craft to any particular building. The work is mainly repairs of cornice work, ventilating systems, tile roofs, and metal doors of various buildings. The Division makes street cans, buggy pans, and scoops for the Bureau of Streets.

A portable engine-driven welder has been secured which has greatly helped in repairing fence and gate work for the various departments.

Electrical Division - 16 menPersonnel

1 General foreman electrician
2 Foreman electricians
15 Electricians
1 Armature winder

The Civil Service Commission has not been able to fill a requisition for two electricians because the demand for competent mechanics in industry makes City employment under temporary appointment unattractive; of an eligible list of nineteen electricians, one accepted employment.

General - With the alleviation of many of our war-caused hindrances this division has returned to nearly full operation. The material situation has so improved that during the year we were able to satisfy the need for better lighting and electrical facilities for many of the City Departments. We have also been able to rebuild or replace some of our overloaded or obsolete installations.

Motor Shop - This shop has been reactivated after being closed for lack of competent personnel. This shop is a valuable asset inasmuch as the City Departments we service have hundreds of motors of every conceivable make and vintage, many of which, in the event of a breakdown, have to be returned to service as soon as possible.

As the Salary Ordinance for 1947-48 does not include a Class E106 Armature Winder, it has been requested that the 1948-49 Ordinance include this classification so that this shop activity may be stabilized. At present one man is employed as a general shop mechanic, motor repair man, and trouble shooter on a temporary Civil Service status.

Transportation - During the latter half of this calendar year the Electrical Department has received three panel-body trucks. These vehicles have been fitted out as shops-on-wheels which has increased our operational efficiency immeasurably. For example: Two of these trucks were assigned to school repairs, and an immediate increase of about 50% was noted in the number of school

repair requisitions handled per man day.

Painting Division - 40 men

Four men are on regular assignment at the City Hall, San Francisco Hospital, and Fire Department.

There are twelve men on street traffic painting under orders from the Engineering Bureau. They are required to work on Sundays, and during the summer are out at daylight to do work in the congested districts. Curb painting under orders from the Police Department occupies the time of four men; they operate from two trucks, covering different parts of the City. All of the metal letters, or stencils (as they are called) that are necessary in this work, are made up in the Sheet Metal Shop. Two men are assigned to the Board of Education's regular monthly Miscellaneous Work Orders and are busy touching up all repair work of the other trades. There are from twelve to fourteen men continually employed on work orders from the School Department, Superior Courts, Public Utilities (San Francisco Airport) Public Welfare, Health Department, Department of Public Works (Budget), Purchasing Department, Real Estate Department, War Memorial Commission, and various other departments. During the fiscal year these men have completed such jobs as painting the offices of the Superintendent of Schools and the classroom used for sight conservation at the Commodore Stockton School. This work was done according to the specifications of the Pacific Gas & Electric lighting engineers. Also completed were various courtrooms and chambers of the Superior and Municipal Courts in the City Hall and Hall of Justice. Each of the projects completed by the Painting Division was done under the \$2,000 limit, as required by the Charter.

Cement Work Division - 13 to 15 men

This division takes care of all requests from all the other divisions in this Bureau to assist in their work, such as opening

up ground for broken water pipes, choked sewers, drilling for electric conduits and replacing walks and yards which have been opened up. It has four to six men working continuously in school yards filling in depressions and bad cracks in the asphalt work. This division repairs and maintains all street signs, which work has kept a truck and two men busy all year as the signs had not been serviced at all during the war period.

Carpentry Division - 25 men

There are six or seven men assigned regularly to the City Hall, Hall of Justice, San Francisco Hospital, and Fire Department.

Five men work on miscellaneous school requisitions taking care of complaints such as door and window repairs, replacing door checks, various kinds of cabinet work, yard benches and other jobs too numerous to mention.

The remaining ten to fifteen men are always busy on work orders from other City Departments doing all kinds of alteration work, including bridge repair (replacing planking) and putting up and removing stands and bleachers on orders from the Chief Administrative Officer.

Miscellaneous Trades Division

Locksmiths - Four locksmiths are constantly engaged answering emergency calls from all departments of the City, especially the Recreation Department -- vandals are continually tampering with locks and breaking into club houses. The School Department lock problem is very serious as the master keys are often lost or stolen, with the result that the schools are entered at night and badly damaged, and, of course, it is then essential to change all locks. This happens repeatedly. Following is a partial list of the major work performed by this division during the past year: changed keys and reset locks on all outside doors of cafeterias of four high schools and eight elementary schools; repaired approximately 500

door and floor checks for various schools; re-keyed playgrounds and centers of the Recreation Department to fit a master key; at County Jail #1 overhauled and re-keyed 44 cells, changing the lock on the entrance door to the Jail; performed various repair work for the San Francisco Airport and Park Department such as door checks and new keys. On account of so many keys being in the possession of different persons, allowing easy access to the building, the cylinders of the main doors of the City Hall were all replaced.

Glaziers - 4 men

Continually replacing broken glass, especially during vacation periods.

Plasterers - 2 men

Tile Setter - 1 man

Busy on patching and repair work in all City-owned buildings.

Bricklayers - 2 to 4 men

These men work only during the school vacation period at which time school boilers are re-bricked.



STATISTICAL DATA

Operations for the year entailed the following expenditures:

Superintendence	\$ 32,955.38	
Building operations	328,991.71	
Yard operations	4,309.18	
Shopmen & shops	9,171.25	
Carfare, towel service, etc.	6,576.38	
Emergency leaves	7,496.61	
Vacations	5,611.10	
Fuel oil	38,186.96	
Automotive Repair	<u>5,669.19</u>	
		\$ 438,967.76

Maintenance and repair of general government buildings performed with funds allocated to the Bureau consisted of:

Fire stations	32,249.66
Police stations	5,930.19
County jails	8,655.20
Hall of Justice	16,909.37
City Hall	39,265.94
San Francisco Hospital and Laguna Honda Home	34,911.75
Juvenile Detention Home	1,783.97
Miscellaneous structures	5,522.75
Equipment purchase	<u>8,764.84</u>

153,993.67

Work order performance appeared in three general subdivisions:

Schools	456,429.37
Traffic striping	122,055.82
Various	<u>286,170.52</u>

864,655.71

Total

\$1,457,617.14

APPENDIX I

BUREAU OF ENGINEERING

CURRENT CONTRACT DATA - SUMMARY

Showing all Contract Work Awarded or Under Way
July 1, 1947 to June 30, 1948

Table	Type of Construction	Contracts Awarded		Amount expended during fiscal year 1947 - 1948
		1947 - 1948	Aggregate value	
		Number		
A	Major Thoroughfares	4	\$ 495,753.98	\$ 246,027.48
B-1	Streets-Private Contracts	34	441,155.00	609,760.00
B-2	Streets, Assessment Proceedings	22	209,070.85	288,281.42
B-3	Streets, Public Contracts, City Pay	12	405,378.93	264,469.84
B-4	Street Car Track Removal	6	799,944.84	257,263.64
C	Traffic Signals and Channelization	10	150,681.15	157,684.86
D-1	Sewers - Pipe, Vitrified Clay and Concrete	2	290,745.55	176,233.75
D-2	Sewers - Concrete (Monolithic)	1	70,700.00	355,450.00
E	Miscellaneous	16	120,403.26	503,703.98
TOTALS Awarded and Expended		107	\$2,983,833.56	\$2,858,874.97

TABLES

On the following pages appear separate tables of current contracts for each of the Types of Construction listed above. The last column of each table, headed "Fund," denotes the source of the funds used to finance each project according to the following:

Abbreviation Legend

<u>Designation</u>	<u>Description of Fund</u>
General	General Fund City and County
Spec. Rd.	Special Road Improvement Fund
2d 1/4¢	Special Gas Tax Street Improvement Fund
1st 1/4¢	One-quarter Cent Gas Tax for expenditures on State Highways within the City
Assmt.	Assessed to property benefiting under the Street Improvement Ordinance of 1934
Fd. Prop. Owners	Costs borne by Property Owners under private contract
1944 Sewer Bonds	Bond Issue voted by citizens on November 7, 1944 - \$12,000,000
1947 St. Imp. Bond	Bond Issue voted by citizens on November 4, 1947 - \$22,850,000

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1947-1948	Fund
<u>A - MAJOR THOROUGHFARES</u>						
Clipper St. Extn. bet. Douglass St. & Portola Dr. (Sewers, curbs, paving) Eaton & Smith	5/29/46	7/8/47	100	\$195,010.83	\$ 5,850.00	Spec. Rd.
Guerrero St. bet. 14th & Army Sts. (Sidewalk narrowing, channelize and repave) Eaton & Smith	6/28/46	12/10/47	100	218,239.19	4,365.00	Spec. Rd.
Alemany Blvd. Sec. "A" bet. Mission St. & 3400' Ely. (Curbs, paving, center island) C. L. Harney, Inc.	5/28/47	1/23/48	100	96,532.07	96,532.07	1st 1/4¢
Sunset Blvd. from Sloat Blvd. Sly. (Emulsified asphalt seal coat - two applications) Morgan Constr. Co.	6/4/47	8/19/47	100	5,378.13	5,378.13	2d 1/4¢
Geary St. bet. Broderick St. & Presidio Ave. Geary Blvd. bet. Presidio & Masonic Aves. (Grading, paving, sewers, track relocation) C. L. Harney, Inc.	7/16/47		25	298,618.70	74,600.00	2d 1/4¢ Mun. Ry.
Geneva Ave. bet. Mission St. & Alemany Blvd. (Curbs, sewers, pave) C. L. Harney, Inc.	10/8/47	3/12/48	100	42,237.32	42,237.32	2d 1/4¢
Great Highway bet. Lincoln Way & Sloat Blvd. (Emulsified asphalt seal coat, two applications) Gabriel Constr. Co.	4/23/48	6/19/48	100	17,064.96	17,064.96	2d 1/4¢
Army St. Widening bet. Harrison St. & So. Van Ness Ave. (Grading, sewers, curbs and paving) C. L. Harney	5/28/48		0	137,833.00		2d 1/4¢
Totals awarded and expended during fiscal year				\$495,753.98	\$246,027.48	

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1947-1948	Fund
<u>B-1 - STREETS - Private Contracts</u> <u>Lakeshore Park Subdivision #3</u> <u>(Sewage Pumping Station)</u> Eaton & Smith	3/15/46	100	\$ 35,000.00	\$ 9,100.00	Pd. Prop. Owners
<u>Anzavista Subdivision (Streets within)</u> <u>(Sewers, curb, paving, lighting system)</u> C. L. Harney	5/1/46	100	216,000.00	6,480.00	"
<u>*39th Ave. (portions) bet. Rivera &</u> <u>Santiago Sts. (Sewers, curbs, paving)</u> C. L. Harney	5/10/46	100	11,000.00	4,400.00	"
<u>Rivera St. bet. 40th & 41st Aves.</u> <u>(Sewers, curbs, paving)</u> C. L. Harney	5/10/46	100	5,500.00	2,750.00	"
<u>*41st & 42d Aves. (portions) bet. Pacheco</u> <u>& Quintara Sts. Pacheco St. bet. 41st &</u> <u>42d Aves. (portions) (Sewers, curbs, pav-</u> <u>ing)</u> C. L. Harney	5/24/46	100	26,000.00	10,400.00	"
<u>Miraloma Park (certain streets within)</u> <u>(Sewers, curbs, paving, lighting system)</u> C. L. Harney	6/26/46	100	125,000.00	62,500.00	"
<u>*39th Ave. (portions) bet. Vicente &</u> <u>Wavona Sts. (Sewers, curbs, paving)</u> C. L. Harney	7/12/46	100	12,500.00	5,000.00	"
<u>*41st Ave. (portions) bet. Vicente &</u> <u>Wavona Sts. (Sewers, curbs, paving)</u> C. L. Harney	7/26/46	100	9,850.00	6,400.00	"
<u>*Wavona St. (portions) bet. 39th & 41st</u> <u>Aves. bet. 42s & 43d Aves. (Sewers,</u> <u>curbs, paving) C. L. Harney</u>	8/16/46	100	16,000.00	8,800.00	"

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1947-1948	Fund
<u>B-1 STREETS - Private Contracts (Cont'd)</u>						
<u>40th Ave. bet. Vicente & Wavona Sts. (Sewers, curbs, paving)</u> C. L. Harney	8/16/46	8/7/47	100	\$ 16,000.00	\$ 8,800.00	Pd. Prop. Owners
<u>Wavona St. bet. 38th & 39th Aves. (Sewers, curbs, paving)</u> C. L. Harney	8/16/46	8/5/47	100	6,100.00	2,440.00	"
<u>Laurel Heights Subdivision (Streets within) (Sewers, curbs, paving, light- ing system)</u> C. L. Harney	8/30/46	2/16/48	100	216,000.00	129,600.00	"
<u>Graystone Terrace from Iron Alley 170' westerly (Curbs, paving)</u> Pay Improvement Co.	9/13/46	12/12/47	100	3,200.00	1,600.00	"
<u>39th Ave. bet. Wavona & Yorba Sts. (Sewers, curbs, paving)</u> C. L. Harney	10/9/46	9/6/47	100	15,200.00	9,880.00	"
<u>*Pacheco St. (portions) bet. 40th & 41st Aves. (Sewers, curbs, paving)</u> C. L. Harney	11/1/46	7/17/47	100	3,800.00	1,120.00	"
<u>*39th & 40th Aves. (portions) bet. Quintara & Rivera Sts. (Sewers, curbs, paving)</u> C. L. Harney	11/1/46	7/22/47	100	20,100.00	11,060.00	"
<u>42d Ave. bet. Wavona St. & Sloat Blvd. (Sewers, curbs, paving)</u> C. L. Harney	11/29/46	8/12/47	100	11,200.00	4,480.00	"
<u>Graystone Terrace bet. Corbett Ave. & Copper Alley (Sly. 1/2) bet. *Copper & Iron Alleys (Sewers, curbs, paving)</u> Pay Improvement Co.	12/4/46	12/12/47	100	6,500.00	4,880.00	"

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1947-1948	Fund
B-1 STREETS - Private Contracts (Cont'd)						
*Dublin St. (portions) bet. Persia & Russia Sts. (Sewers, curbs, paving) Eaton & Smith	12/27/46	10/17/47	100	\$ 12,100.00	\$ 6,050.00	Pd. Prop. Owners
Quesada Ave. from Quint St. Ely. 475' (Curbs, paving) Fay Improvement Co.	2/19/47	7/1/47	100	9,250.00	4,625.00	"
38th Ave. bet. Wavona & Yorba Sts. (Sewers, curbs, paving) C. L. Harney	2/26/47	8/14/47	100	12,300.00	6,760.00	"
39th Ave. bet. Yorba St. & Sloat Blvd. (Curbs, paving)C. L. Harney	2/26/47	10/17/47	100	4,250.00	2,340.00	"
40th Ave. bet. Wavona & Yorba Sts. (Sewers, curbs, paving) C. L. Harney	2/26/47	8/13/47	100	11,850.00	6,520.00	"
*Yorba St. (portions) bet. 38th & 40th Aves. (Sewers, curbs, paving) C. L. Harney	3/7/47	9/6/47	100	10,600.00	6,900.00	"
Naglee St. bet. Huron Ave. & Alemany Blvd. (Curbs, paving) C. L. Harney	3/12/47	1/15/48	100	6,400.00	5,120.00	"
Hubbell St. bet. 7th & 16th Sts. (Curb, paving) Fay Improvement Co.	3/21/47	8/5/47	100	14,765.00	2,950.00	"
Ramsell St. bet. Alemany Blvd. & Palmetto Ave. (Grading, sewer) E. J. Treacy	4/9/47	8/29/47	100	750.00	560.00	"
Napoleon St. bet. Evans & Jerrold Aves. (Curbs, paving) Eaton & Smith	4/25/47	1/23/48	100	36,000.00	36,000.00	"

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1947-1948	Fund
<u>B-1 STREETS - Private Contracts (Cont'd)</u>					
<u>41st Ave. bet. Wavona St. & Sloat Blvd.</u> (Sewers, curbs, paving) C. L. Harney, Inc.	4/30/47	100	\$ 15,900.00	\$ 10,330.00	Pd. Prop. Owners
<u>Pacheco St. from Ortega Way, 260' Sly.</u> (Sewer) Henry Doelger	5/9/47	100	1,300.00	1,040.00	"
<u>O'Farrell St. (N. ½) Wly. 156' from a point 180' Wly. from Stockton St. (Relocate auxiliary water supply main)</u> Eaton & Smith	5/9/47	0	3,500.00	0	"
<u>*40th, 41st & 42d Aves. bet. Santiago & Taraval Sts.</u> (Sewers, curbs, paving) C. L. Harney, Inc.	5/21/47	100	39,500.00	23,700.00	"
<u>Block 2134-B bet. 68' & 178' Wly. from Quintara St. (Construct manhole, remove sewer from easement)</u> Henry Doelger	6/11/47	100	250.00	250.00	"
<u>Rankin St. (SE ½) bet. Oakdale & Palou Aves.</u> (Curbs, paving) Pay Improvement Co.	7/2/47	100	1,800.00	1,800.00	"
<u>*Garen St. (portions) bet. Boylston & Merrill Sts.</u> (Curbs, sewer, paving) Eaton & Smith	7/2/47	100	6,300.00	6,300.00	"
<u>Williar Ave. (E. ½) bet. Niagara & 75' Sly.</u> (Curbs, paving) Eaton & Smith	7/9/47	100	850.00	850.00	"
<u>Quintara St. bet. 31st & 32d Aves.</u> (Curbs, paving) C. L. Harney, Inc.	7/16/47	100	5,000.00	5,000.00	"

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed Date	Contract Amount	Amount Expended 1947-1948	Fund
<u>B-1 STREETS - Private Contracts (Cont'd)</u>					
* <u>Cambridge St. (W. $\frac{1}{2}$) bet. Pioche & Silliman Sts. Silliman St. (S. $\frac{1}{2}$) bet. Cambridge St. & Yale St. (Sewers, curbs, paving)</u> Pay Improvement Company	7/18/47	11/3/47	100 \$ 11,500.00	\$ 11,500.00	Pd. Prop. Owners
* <u>40th Ave. (portions) bet. Rivera & Santiago Sts. (Sewers, curb, paving)</u> C. L. Harney, Inc.	7/18/47	1/23/48	100 12,900.00	12,900.00	"
<u>Main St. (S.W. side) 175' SE of Market St. (Concrete catch-basin)</u> Swinerton & Walberg	8/27/47	10/9/47	100 250.00	250.00	"
<u>Revere Ave. (portions) bet. Industrial & Selby Sts. (Curbs, paving)</u> M. J. Lynch	9/3/47	11/10/47	100 9,500.00	9,500.00	"
<u>25th Ave. Vicente St. 400' Sly. (Sewer, curbs, paving)</u> C. L. Harney, Inc.	9/3/47	5/5/48	100 12,600.00	12,600.00	"
* <u>43d Ave. (portions) bet. Wavona St. & Sloat Blvd. 44th Ave. (portions) bet. Wavona St. & Sloat Blvd. (Curbs, paving)</u> C. L. Harney, Inc.	9/5/47	6/3/48	100 8,300.00	8,300.00	"
<u>Edgehill Way (Wly. $\frac{1}{2}$) Block 2936-A (Sewer in easement)</u> Pay Improvement Company	11/7/47	1/7/48	100 2,175.00	2,175.00	"
* <u>27th St. bet. Diamond & Castro Sts. (Sewers, curbs, paving)</u> C. L. Harney, Inc.	1/9/48		40 10,200.00	4,080.00	"
<u>Rhode Island St. bet. Alameda & 15th Sts. (Curbs, paving, sewer in crossing)</u> Pay Improvement Company	1/21/48		60 9,000.00	5,400.00	"

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed Date	Contract Amount	Amount Expended 1947-1948	Fund
B-1 STREETS - Private Contracts (Cont'd)					
*Amherst St. (portions) bet. Silver Ave. & Silliman St. (Sever, curbs, paving) Pay Improvement Company	1/23/48	30	\$ 4,600.00	\$1,400.00	Pd. Prop. Owners
Concord St. (Ely $\frac{1}{2}$) bet. Brunswick St. & 50 feet Nly (Curbs, paving) Pay Improvement Company	2/4/48	3/11/48	540.00	540.00	"
Andover St. (W. $\frac{1}{2}$) bet. 125 & 150 ft. So. of Benton Ave. (Paving, side sever) M. J. Lynch	2/13/48	2/19/48	300.00	300.00	"
**Worcester Ave. bet. Randolph St. (S. line) & St. Charles Ave. St. Charles Ave. bet. Worcester Ave. & 293.94 ft. Ely. (Curbs, severs, paving) Pay Improvement Company	2/18/48	6/30/48	13,800.00	13,800.00	"
San Jacinto Way (Blocks 3041 & 3047) (Sever in easement) Pay Improvement Company	2/27/48	4/12/48	1,050.00	1,050.00	"
42d Ave. bet. Ortega & Pacheco Sts. (Severs, curbs, paving) C. L. Harney, Inc.	3/5/48	6/18/48	16,100.00	16,100.00	"
*Jennings St. (portions) bet. Egbert & Fitzgerald Aves. (Curb, paving) Eaton & Smith	3/12/48	50	2,500.00	1,250.00	"
Montana St. bet. Plymouth Ave. & Summit St. (Sever, curbs, paving) Eaton & Smith	3/26/48	30	15,000.00	4,500.00	"
*Ramcell St. bet. Alemany Blvd. & Palmatto Ave. (Curbs, paving) E. J. Treacy	4/2/48	6/30/48	2,950.00	2,950.00	"

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1947-1948	Fund
B-1 STREETS - Private Contracts (Cont'd)					
Amherst St. from Wayland St. to proposed Bacon St. Princeton St. from Wayland St. to a line 400 feet north of proposed Bacon St. Bacon St. bet. University and Amherst Sts. (Grading, sewers, curbs, paving) Eaton & Smith	4/7/48	30	\$ 45,000.00	\$ 13,500.00	Pd. Prop. Owners
38th Ave. bet. Quintara & Rivera Sts. (Grading, curbs, pavings, sewers) C. L. Harney, Inc.	4/14/48	60	16,000.00	9,600.00	"
*Yorba St. (portions) bet. 40th Ave. & Wly. termination (Curbs, paving) C. L. Harney, Inc.	4/16/48	20	2,900.00	580.00	"
**37th Ave. (W. ½) bet. Quintara & Rivera Sts. (Sewers, curbs, paving) C. L. Harney, Inc.	4/23/48	100	8,100.00	8,100.00	"
Alameda St. bet. Rhode Island & DeHaro Sts. (Curbs, paving) Fay Improvement Company	4/28/48		3,740.00		"
Lakeshore Park Subdivision #3 (Streets within) (Sewers, curbs, paving) C. L. Harney, Inc.	4/28/48	30	165,000.00	49,500.00	"
Delta St. bet. Teddy & Raymond Aves. (Sewers, curbs, paving) Eaton & Smith	5/5/48	50	6,200.00	3,100.00	"
Bemis St. bet. Miguel St. and 80 feet Swly. (Sewer) Standard Bldg. Company	5/5/48	0	500.00		"

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1947-1948	Fund
<u>B-1 STREETS - Private Contracts (Cont'd)</u>					
Pioche St. (Sly. $\frac{1}{2}$) bet. Oxford St. and 145 feet Wly. (Sewer)					
Pay Improvement Company	5/5/48	0	\$ 500.00		Pd. Prop. Owners
Quesada Ave. bet. Industrial & Selby Sts. (Curbs, paving)					
Pay Improvement Company	5/14/48	0	500.00		"
Apparel Heights Subdivision (Grading, sewers, curbs, paving)					
Eaton & Smith	6/23/48	0	40,000.00		"
Pacheco St. bet. 34th & 36th Aves. (Grading, sewers, curbs, paving)					
C. L. Harney	6/25/48	0	5,500.00		"
Totals awarded and expended during fiscal year			\$441,155.00	\$609,760.00	

*Remaining portion of street improved under assessment proceedings.

**Remainder improved under Public Contract - City Pay.

Description & Contractor	Awarded	Date	%	Contract Amount	Expended 1947-1948	Fund
B-2 STREETS - Assessment Proceedings						
Rivera St. bet. 38th & 40th Aves. crossings. 38th, 39th & 40th Aves. (Sewers, curbs, paving) C. L. Harney, Inc.	5/10/46	7/23/47	100	\$ 21,678.80 (8,000.00+)	\$11,920.00	Assmt. Spec. Rd.
*39th Ave. (portions) bet. Rivera & Santiago Sts. (Sewers, curbs, paving) C. L. Harney, Inc.	5/10/46	7/22/47	100	2,802.70 (800.00+)	1,540.00	"
41st Ave. Crossings Pacheco & Rivera Sts. (Sewers, curbs, paving) C. L. Harney, Inc.	5/10/46	7/27/47	100	6,151.00	2,760.00	Assmt.
*41st Ave. (portions) bet. Pacheco & Quintara Sts. 42d Ave. (portions) bet. Pacheco & Quintara Sts. Pacheco St. (portions) bet. 41st & 42d Aves. (Sewers, curbs, paving) C. L. Harney, Inc.	5/24/46	7/18/47	100	5,044.19 (2,800.00+)	2,020.00	Assmt. Spec. Rd.
*39th Ave. (portions) bet. Vicente & Wawona Sts. (Sewers, curbs, paving) C. L. Harney, Inc.	7/12/46	8/4/47	100	1,435.00 (650.00+)	570.00	"
*41st Ave. (portions) bet. Vicente & Wawona Sts. (Sewers, curbs, paving) C. L. Harney, Inc.	7/26/46	7/28/47	100	3,408.00 (200.00+)	2,220.00	"
Wawona St. (portions) bet. 39th & 41st Aves. (portions) bet. 42d & 43d Aves. (Sewers, curbs, paving) C. L. Harney, Inc.	8/16/46	8/5/47	100	2,700.00 (900.00+)	1,490.00	"
Wawona St. crossings of 39th & 40th Aves. (Sewers, curb, paving) C. L. Harney, Inc.	8/16/46	9/6/47	100	6,529.00 (350.00+)	3,920.00	"

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed Date	Contract Amount	Amount Expended 1947-1948	Fund
<u>B-2 STREETS - Assessment Proceedings (Cont'd)</u>					
<u>Wavona St. bet. 43d & 44th Aves. Cross-ings of 43d & 44th Aves. (Sewers, curbs, paving)</u> C. L. Harney, Inc.	9/20/46	9/6/47	\$ 11,991.64 (3,730.00+)	\$ 6,600.00	Assmt. Spec. Rd.
*Facheco St. bet. 40th Ave. & 82.5' West (Curbs, paving) C. L. Harney, Inc.	11/1/46	7/17/47	1,773.75 (1,100.00+)	710.00	"
<u>Wavona St. bet. 41st & 42d Aves. Cross-ing 41st & 42d Aves. (Sewers, curbs, paving)</u> C. L. Harney, Inc.	11/1/46	9/6/47	13,556.50 (1,700.00+)	7,460.00	"
*39th Ave. (portions) bet. Quintara & Rivera Sts. 40th Ave. (portions) bet. Quintara & Rivera Sts. (Curbs, paving) C. L. Harney, Inc.	11/1/46	7/22/47	8,652.50	4,750.00	Assmt.
*Dublin St. (portions) bet. Persia & Russia Aves. (Curbs, paving) Eaton & Smith	12/27/46	10/17/47	5,477.50 (2,100.00+)	2,740.00	Assmt. Spec. Rd.
<u>Lakeview Ave. bet. Ashton & Jules Aves. Including intersection of Jules Ave. (Sewers, curbs, paving)</u> E. J. Treacy	1/10/47	8/29/47	7,893.50	5,130.00	Assmt.
<u>Bella Vista Way bet. Sequoia Way & Avoca Alley. Avoca Alley bet. Bella Vista Way & Myra Way. Myra Way bet. Omar Way & Avoca Alley. Omar Way from Myra Way Ely. to existing pavement; also intersections of Bella Vista Way & Dorcas Way, Bella Vista Way & Rockdale Dr., Myra Way & Omar Way, and Myra Way & 31st St. (Sewers, curbs, paving and lighting)</u> C. L. Harney, Inc.	2/21/47	3/3/48	22,850.60 (13,200.00+)	22,850.60	Assmt. Spec. Rd.

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1947-1948	Fund
B-2 STREETS - Assessment Proceedings (Cont'd)						
*39th Ave. (W. ½) bet. Sloat Blvd. & 91 st Nly. (Curbs, paving) C. L. Harney, Inc.	2/26/47	10/17/47	100	\$ 968.60 (600.00+)	\$ 530.00	Assmt. Spec. Rd.
*38th Ave. (portions) bet. Wawona & Yorba Sts. (Curbs, paving) C. L. Harney, Inc.	2/26/47	8/14/47	100	598.00	330.00	Assmt.
*40th Ave. (portions) bet. Wawona & Yorba Sts. (Curbs, paving) C. L. Harney, Inc.	2/26/47	8/13/47	100	3,096.65 (1,000.00+)	1,700.00	Assmt. Spec. Rd.
Yorba St. bet. 37th & 38th Aves. & Intersections of Yorba at 38th, 39th & 40th Aves. (Sewers, curb, paving) Eaton & Smith	3/7/47	10/21/47	100	12,313.20 (1,200.00+)	8,000.00	"
*Yorba St. (portions) bet. 38th & 39th Aves. (Curb, paving) C. L. Harney, Inc.	3/7/47	9/6/47	100	1,372.00 (100.00+)	890.00	"
Rivera St. bet. 37th & 38th Aves. (Sewers, curbs, paving) Pay Improvement Co.	5/7/47	9/25/47	100	6,981.32 (700.00+)	6,981.32	"
*40th, 41st, 42d Aves. (portions) (Curbs, paving) C. L. Harney, Inc.	5/21/47	1/23/48	100	8,120.00 (1,000.00+)	4,970.00	"
*Gaven St. (portions) bet. Boylston & Merrill Sts. (Curbs, paving) Eaton & Smith	7/2/47	12/5/47	100	2,793.50 (1,000.00+)	2,793.50	"

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed Date	%	Contract Amount	Amount Expended 1947-1948	Fund
B-2 STREETS - Assessment Proceedings (Cont'd)						
*40th Ave. (portions) bet. Rivera & Santiago Sts. C. L. Harney, Inc.	7/18/47	1/23/48	100	\$ 4,822.00 (1,100.00+)	\$ 4,822.00	Assmt. Spec. Rd.
Lathrop Ave. bet. Wheeler & Peninsula Aves. (Curbs, paving) Eaton & Smith	8/6/47	9/10/47	100	2,367.00 (1,300.00+)	2,367.00	"
Tunnel Ave. bet. Blanken Ave. & Sly Termination (Curbs, paving) Fay Improvement Co.	8/15/47	11/14/47	100	8,889.00 (1,000.00+)	8,889.00	"
*Revere Ave. (portions) bet. Industrial & Selby Sts. (Curbs, paving) M. J. Lynch	9/3/47	11/10/47	100	4,178.00 (2,400.00+)	4,178.00	"
*Diamond St. bet. 28th & Valley Sts. including crossing of Valley St. (Sewers, curbs, paving) Eaton & Smith	9/5/47	12/5/47	100	7,721.40 (600.00+)	7,721.40	"
*43d Ave. (portions) bet. Wavona St. & Sloat Blvd. 44th Ave. (portions) bet. Wavona St. & Sloat Blvd. (Curbs, paving) C. L. Harney, Inc.	9/5/47	6/3/48	100	3,935.50 (2,300.00+)	3,935.50	"
Lathrop Ave. bet. Peninsula & Tocoloma Aves. (Curbs, paving) Fay Improvement Company	11/7/47	6/9/48	100	2,547.00 (1,400.00+)	2,547.00	"
Barneveld Ave. bet. Jerrold & Oakdale Aves. Loomis St. bet. Barneveld & Oakdale Aves. (Sewers, curbs, paving) Fay Improvement Company	11/14/47	6/30/48	100	68,225.60 (15,000.00+)	68,225.60	"

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1947-1948	Fund
<u>B-2 STREETS - Assessment Proceedings (Cont'd)</u>					
Mendell St. bet. Hudson & Jerrold Aves. (Sewers, curbs, paving) Eaton & Smith	12/5/47	5/4/48	100	\$ 12,795.50 (2,000.00+)	\$12,795.50 Spec. Rd. Assmt.
41st Ave. (portions) bet. Ortega & Pacheco Sts. (Curbs, paving) C. L. Harney, Inc.	12/5/47	4/6/48	100	2,160.00	2,160.00 Assmt.
Industrial St. (portions) bet. Bayshore Blvd. & Oakdale Ave. (Sewers, curbs, paving) C. L. Harney, Inc.	1/6/48	5/26/48	100	50,790.50 (25,600.00+)	50,790.50 2d 1/4¢ Assmt.
*27th St. (portions) bet. Diamond & Castro Sts. (Curbs, paving) C. L. Harney, Inc.	1/9/48		40	4,359.00 (2,100.00+)	1,750.00 Spec. Rd. Assmt.
Felton St. (Nly. ½) bet. Knox St. & 95' Ely. & other locations (Curbs, paving) Eaton & Smith	1/16/48	5/7/48	100	9,814.70 (1,700.00+)	9,814.70 Spec. Rd. Assmt.
Cambridge St. bet. Silver Ave. & Pioche St. including crossing of Pioche St. (Curbs, paving) E. J. Treacy	1/16/48			2,631.80 (1,100.00+)	Assmt. Spec. Rd.
*Amherst St. (E. ½) bet. Silliman St. & 60' North (Curbs, paving) Fay Improvement Co.	1/23/48		30	879.00	265.00 Assmt.
Jennings St. (SE ½) bet. Egbert Ave. & 100' SW (Curbs, paving) Eaton & Smith	3/12/48		50	813.00 (300.00+)	400.00 Spec. Rd. Assmt.

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1947-1948	Fund
<u>B-2 STREETS - Assessment Proceedings (Cont'd)</u>					
<u>Lyon St. South of Bush St. and other locations (Repair sidewalks)</u> Ivar C. Eggen	3/12/48	5/12/48	100	\$ 2,144.80	\$ 2,144.80 Asmt.
<u>Hanover St. (Sly. 1/2) bet. Prague St. & 126 feet Wly. Crossing of Hanover & Allison Sts. Intersections of Hanover, Pope, Prague Sts. (Sewers, curbs, paving)</u> Eaton & Smith	4/16/48		40	5,746.00 (1,500.00+)	Assmt. Spec. Rd.
<u>*Yorba St. bet. 40th Ave. & Wly. termination (Curbs, paving)</u> C. L. Harney, Inc.	4/16/48		20	1,439.80 (600.00+)	300.00 "
<u>Arkansas St. from 23d St. north to existing pavement (Sewers, curb, paving)</u> Pay Improvement Company	5/14/48		0	8,517.75 (2,200.00+)	"
<u>Leroy Place bet. Sacramento St. & Sly. termination (Sewers, curbs, paving)</u> Arthur Walgren	6/9/48		0	1,500.00	Spec. Rd.
<u>Totals awarded and expended during fiscal year</u>				<u>\$209,070.85</u>	<u>\$288,281.42</u>

*Remaining portion of street improved under private contract.

+Amount paid by City - Balance paid by Property Owners.

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1947-1948	Fund
<u>B-3 STREETS - Public Contracts - City Pay</u>					
Graystone Terrace (Nly. $\frac{1}{2}$) bet. Copper Alley & Iron Alley (Curbs, paving) Pay Improvement Company	12/4/46	12/12/47 100	\$ 2,560.44	\$ 1,410.00	Spec. Rd.
Presidio Ave. bet. Post & California Sts. (Widen & Pave) C. L. Harney, Inc.	6/18/47	12/4/47 100	24,724.66	24,724.66	2d 1/4¢
*Cambridge St. (E. $\frac{1}{2}$) bet. Ploche & Siliman Sts. Silliman St. (N. $\frac{1}{2}$) bet. Cambridge & Yale Sts. (Grading, sewers, curbs, paving) Pay Improvement Company	7/18/47	11/3/47 100	7,699.70	7,699.70	Spec. Rd.
Bowdin St. (W. $\frac{1}{2}$) bet. Felton & Burrows St. (Curbs, paving) Eaton & Smith	8/8/47	9/23/47 100	3,000.00	3,000.00	"
Povell St. bet. California St. & Broadway (Widen and reconstruct) Eaton & Smith	8/27/47	3/23/48 100	42,134.39	42,134.39	General
Jules Ave. bet. Lakeview Ave. & 40' No. (Grading) Rosenberg Brothers	11/7/47	12/15/48 100	235.00	235.00	Spec. Rd.
Pine St. bet. Kearny & Stockton Sts. (Replace brick center strip with concrete pavement) Pay Improvement Company	11/14/47	12/20/47 100	11,563.17	11,563.17	"
Seventh St. bet. Mission & Townsend Sts. (Widen & Pave) C. L. Harney, Inc.	12/3/47	3/4/48 100	110,458.92	110,458.92	2d 1/4¢

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed Date	Contract Amount	Amount Expended 1947-1948	Fund
<u>B-3 STREETS - Public Contracts - City Pay (Cont'd)</u>					
Clipper & Douglass Sts. (SE Corner) (Grade & construct sidewalk) Harold H. Gent	1/9/48	3/15/48	\$ 749.00	\$ 749.00	2d 1/4 ^d Spec. Rd.
St. Charles Ave. (W. $\frac{1}{2}$) bet. 244.40 and 293.94 feet south of Worcester Ave. (Curbs and paving) Pay Improvement Co.	3/12/48	6/30/48	735.00	735.00	Spec. Rd.
*37th Ave. (E. $\frac{1}{2}$) bet. Quintara & Rivera Sts. (Curbs, paving) C. L. Harney, Inc.	4/23/48	6/3/48	7,260.00	7,260.00	" "
Clara St. bet 4th & 6th Sts. Shipley St. bet. 4th & 6th Sts. Falmouth St. bet. Folsom & Shipley Sts. Clementina St. from 6th St. 380 ft. Ely. Russ St. bet. Howard & Folsom Sts. Moss St. bet. Bryant St. & 345 feet S.W. (Raise to grade, sewers, curbs, paving) C. L. Harney, Inc.	5/7/48		187,898.00	54,500.00	General Spec. Rd.
16th St. bet. 7th & Rhode Island Sts. (Reconstruct pavement) Pay Improvement Co.	5/12/48		26,647.75		2d 1/4 ^d Spec. Rd.
Pacheco St. (S. $\frac{1}{2}$) bet. 34th & 35th Aves. (Curbs & paving) C. L. Harney, Inc.	6/25/48		6,998.00		Spec. Rd.
Totals awarded and expended during fiscal year			\$405,378.93	\$264,469.84	

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1947-1948	Fund
<u>B-4 - STREET CAR TRACK REMOVAL</u>					
Sacramento St. bet. Van Ness Ave. & Gough St. (Remove cable car tracks & repave)	3/19/47	7/16/47	100 \$ 16,902.17	\$ 8,620.00	General
Pay Improvement Co.					
Sansome St. bet. Bush & Chestnut Sts. (Remove street car tracks and repave)	12/10/47	3/31/48	100 79,843.64	79,843.64	General
Eaton & Smith					
Folsom St. bet. 3d & Stewart Sts.					
Stewart St. bet. Howard & Folsom Sts.					
Howard St. bet. Stewart St. & Embarcadero. Embarcadero bet. Howard St. & underpass (Remove street car tracks & repave)	3/17/48	82	86,514.00	71,000.00	1947 St. Imp. Bonds
M. J. Lynch					
Sacramento St. bet. Embarcadero & Van Ness Ave. Larkin St. bet Sacramento & Clay Sts. (Remove cable car tracks & repave)	4/14/48	45	104,900.20	47,300.00	" "
Pay Improvement Co.					
Kearny St. bet. Geary St. & Broadway (Remove street car tracks & repave)	5/5/48	45	112,479.50	50,500.00	" "
Eaton & Smith					
Polk St. bet. Post & N. Point Sts. (Remove street car tracks & repave)	6/2/48	0	154,275.00		" "
Eaton & Smith					
McAllister St. bet. Market St. & Central Ave. Fulton St. bet. Masonic Ave. & Stanyan St. (Remove street car tracks & repave)	6/25/48	0	261,932.50		" "
Lowrie Paving Co.					
Totals awarded and expended during fiscal year			\$799,944.84	\$257,263.64	

CURRENT CONTRACT DATA 1947-1948

<u>Description & Contractor</u>	<u>Awarded Date</u>	<u>Completed Date</u>	<u>Contract Amount</u>	<u>Amount Expended 1947-1948</u>	<u>Fund</u>
<u>C - TRAFFIC SIGNALS & CHANNELIZATION</u>					
Bayshore Blvd. bet. 3d St. & Co. Line (3-light traffic signals & channelization) R. Flatland	1/3/47	3/31/48	100 \$ 71,171.85	\$ 28,470.00	1st 1/4¢
Third St. bet. Custer Ave. & Bayshore Blvd. (Center island & channelization) R. Flatland	4/11/47	4/14/48	100 88,841.71	88,841.71	2d 1/4¢
Intersection of Bernal Ave., San Jose Ave., Monterey Blvd., Diamond St. (Channelization) C. L. Harney, Inc.	5/14/47	9/4/47	100 7,494.01	5,850.00	2d 1/4¢
St. Francis Circle (channelization) R. Flatland	7/2/47	9/18/47	100 7,461.15	7,461.15	" "
Alemanly Blvd. & Ocean Ave. (Traffic signals & channelization) Abbott Electric Co.	8/1/47	12/11/47	100 2,395.00	2,395.00	1st 1/4¢ 2nd 1/4¢
16th & Overrero Sts. (Traffic signal installation) Abbott Electric Co.	8/13/47	12/11/47	100 367.00	367.00	2nd 1/4¢
Third St. bet. Custer Ave. & Bayshore Blvd. (Traffic signal system) H. S. Tittle Co.	2/6/48		37 28,317.00	10,500.00	2nd 1/4¢
Van Ness Ave. 10th St., Potrero Ave. State Highway Routes 2 & 58. (Traffic signal system) R. Flatland	2/13/48	15	91,875.00	13,800.00	1st 1/4¢ 2nd 1/4¢
Third & 25th Sts. (Installation of traffic control system) Geo. F. Brayer	5/14/48	0	2,742.00		2nd 1/4¢

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1947-1948	Fund
<u>C - TRAFFIC SIGNALS & CHANNELIZATION (Cont'd)</u>						
Portola Dr. at O'Shaughnessy Blvd. Wood- side Ave. at Laguna Honda Blvd. (Traffic signals) H. C. Reid & Co.	6/4/48		0	\$ 6,864.00		2nd 1/4¢
Post St. at Polk St. & Larkin St. (Traf- fic signals) H. C. Reid & Co.	6/4/48		0	6,693.00		" "
Bayshore Blvd. & Alemany Blvd. & Indus- trial St. (Traffic signals) H. S. Tittle Co.	6/4/48		0	2,800.00		1st 1/4¢
Army St. at Rhode Island St. (Traffic signals) Abbott Electric Co.	6/23/48		0	1,167.00		2nd 1/4¢
Totals awarded and expended during fiscal year				\$150,681.15	\$157,684.86	
<u>D-1 - SEWERS - PIPE - Vitrified & Concrete</u>						
Glen Park Playground (60" concrete pipe) M. J. Treacy	2/26/47	7/22/47	100	\$ 16,865.32	\$ 1,010.00	Bonds 1944
Vicente St. storm water outfall (6'-6" & 2'-5'-0" concrete pipe) Healy-Tibbitts Constr. Co.	3/19/47	1/14/48	100	160,287.65	137,850.00	"
Stanley St. sanitary sewer in 19th Ave. oppo. Denslow Drive (18" C.I.P.) Martin Murphy	5/14/47	7/18/47	100	3,540.00	1,060.00	General
24th St. Ely from Illinois St. (18" Tran- site pipe) Eaton & Smith	5/14/47	7/24/47	100	5,428.14	5,150.00	Bonds 1944

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded	Completed	Contract	Amount	Amount	Fund
	Date	Date	Amount	Expended		
				1947-1948		
<u>D-1 - SEWERS - PIPE - Vitrified & Concrete (Cont'd)</u>						
46th Ave. & Lincoln Way to Richmond-Sunset Sewage Tr. Plant (30" concrete pipe) Eaton & Smith	6/4/47	11/7/47	100	\$ 28,153.90	\$ 28,153.90	Bonds 1944
Fitzgerald Ave.-Griffith St. Ely. (15", 18" V.C.P.) Eaton & Smith	6/6/47	7/29/47	100	3,009.85	3,009.85	"
12th Ave. & Quintara St. (18" V.C.P.) Gabriel Constr. Co.	5/7/48		0	6,183.75		"
Scott St. Sewer System in Waller, Page, Scott & Fell Sts. bet. Steiner St. & 180 ft. W. of Divisadero St. (6'-9", 5'-6", 4'-6", 4'-3", 2'-6' concrete pipe) M. J. Lynch	5/28/48		0	284,561.80		"
Totals awarded and expended during fiscal year				\$290,745.55	\$176,233.75	
<u>D-2 - SEWERS - CONCRETE (Monolithic)</u>						
Scott St. Sewer System, 17th, Church, 14th, Sanchez, Steiner Sts. bet. Treat Ave. & Waller St. (9'-0" x 7'-3", 5'-9", 6'-6", 7'-0" dia.) M & K Corp.	2/20/46	8/27/47	100	\$752,681.95	\$60,600.00	General
Caselli Ave. & Douglas St. bet. Eagle & 18th Sts. (2'-6" x 3'-9", 2'-0" x 3'-0") M. J. Lynch	4/11/47	10/29/47	100	62,473.76	56,850.00	Bonds 1944
Alemaney Sever Sec. "G" & Marin Sts. Sewer Outfall at Islais Creek (3-compartment 10'-0" x 7'-6", 10'-0" x 7'-0") Healy Tibbetts Constr. Co.	5/7/47		93	242,702.00	226,000.00	"
20th St. bet. Alabara & York Sts. Florida St. bet. 20th & 21st Sts. 21st St. bet. Florida & York Sts. (3' x 4'-6", 2'-6" x 3'-9") Martin Murphy	4/28/47		17	70,700.00	12,000.00	"
Totals awarded and expended during fiscal year				\$ 70,700.00	\$355,450.00	

CURRENT CONTRACT DATA 1947-1948

APPENDIX I

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Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1947-1948	Fund
<u>E - MISCELLANEOUS</u>						
Fitzgerald Ave. Sewage Pumping Station (Install pump) E. J. Treacy	3/20/46	7/3/47	100	\$ 2, #98.90	\$ 100.00	General
Richmond-Sunset Sewage Tr. Plant (Enlargement) Clinton Constr. Co. and Anderson & Rowe	6/26/46		93	800,197.00	272,000.00	Bonds 1944
Palace of the Legion of Honor (fire cistern) Eaton & Smith	12/8/46	10/14/47	100	13,000.00	1,040.00	General
Bernal Ave. bet. Miguel St. & St. Mary's Ave. (slope repair) M. J. Lynch	2/28/47	7/18/47	100	20,615.79	4,120.00	Spec. Road
Evans Ave. Bridge at Army St. (new re- inforced concrete bridge) Eaton & Smith	4/16/47	6/11/48	100	67,924.34	61,130.00	2d 1/4¢
Log Cabin Ranch (nr. Redwood City) (water supply system) Murphy & McNair	6/4/47	12/11/47	100	42,898.00	42,898.00	General
Street Sign Installation (New type) 1st contract, Lombard St., Richardson Ave., Apparel City, Anzavista & Laurel Heights - Subdivisions M. J. Lynch	6/4/47	1/16/48	100	4,261.05	4,261.05	Gen. Fund
Third & Fourth St. Bridges over Channel St. (clean and paint) D. E. Burgess	6/14/47	10/12/47	100	15,113.00	15,113.00	2d 1/4¢
Junipero Serra Blvd. at Alemany Blvd. (Test borings, grade separation) J. N. Pitcher	6/24/47	10/2/47	100	840.00	840.00	1st 1/4¢

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded Date	Completed Date	Contract Amount	Amount Expended 1947-1948	Fund
<u>E - MISCELLANEOUS (Cont'd)</u>					
Napoleon St. bet. Evans & Jerrold Aves. (Raise auxiliary water supply line to grade) Eaton & Smith	6/25/47	9/4/47	100 \$ 14,866.55	\$ 14,866.55	General
Hyde St. Sewage Pumping Station (Construction) Central Cal. Constr. Co.	7/23/47	4/15/48	100 43,802.56	43,802.56	Bonds 1944
Palace of the Legion of Honor (Sidewalks and drainage) Love & Haun	10/8/47	12/2/47	100 4,034.55	4,034.55	General
Air Raid Sirens (removal) Chas. E. Waite	10/15/47	5/17/48	100 5,342.25	5,342.25	"
Sewage Pumping Stations (Installing safety guards) Adam Arras & Son	10/29/47	1/2/48	100 1,494.00	1,494.00	"
Anza St. bet. Parker & Masonic Aves. (Test borings and drainage wells) J. N. Pitcher	11/5/47	1/30/48	100 6,277.70	6,277.70	2nd 1/4¢
Municipal Asphalt Plant (Installing 20-ton platform scale) Healy Tibbetts Constr.Co.	12/3/47	2/19/48	100 4,735.00	4,735.00	Spec. Rd.
Street Signs - 2nd contract, new type (Purchaser of Supplies) Ferro Enameling Company	1/5/48	5/3/48	100 11,242.20	11,242.20	General
Bronze Castings for street signs Acme Brass Foundry	1/16/48	6/21/48	100 6,452.12	6,452.12	Spec. Rd.

CURRENT CONTRACT DATA 1947-1948

Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1947-1948	Fund
E- MISCELLANEOUS (Cont'd)						
Army St. bet. Mission St. and So. Van Ness Ave. (raze building) Rite Way Wrecking Co.	3/12/48	6/30/48	100	\$ 175.00	\$ 175.00	2d 1/4¢
Street Sign Installation, 2d contract (Western Addition, Richmond and Marina Dists.) M. J. Lynch	5/5/48		19	19,940.00	3,780.00	General Spec.Rd.
Third St. Bridge at Channel (Repair fenders)	5/28/48		0	1,649.00		2d 1/4¢
Street Signs, 3d contract, new type (Purchaser of Supplies) Ferro Enameling Co.	6/10/48		0	6,103.88		General
264 Golden Gate Ave. (Dept. of Elec- tricity) (Retaining wall) Adam Arras & Son	6/30/48		0	4,422.00		"
Bridle Path, Lake Merced Blvd. bet. Alemany Blvd. Exten. & 2400' N. (Resurface) Arthur Walgren	6/25/48		0	3,456.00		Spec.Rd.
Pacheco St. bet. 40th & 41st Aves. (Remove sand) C. L. Harney	6/23/48		0	912.00		" "
Lincoln Way & Sloat Blvd. Viaducts (Replace doors of electric vaults) F. Kern & Sons	6/23/48		0	365.00		2d 1/4¢
Totals awarded and expended during fiscal year					\$120,403.26	\$503,703.98

APPENDIX II

BUREAU OF ARCHITECTURE

REPORT OF ACTIVITIES

Showing all work completed, contracts under construction and work in progress, and work under preparation - July 1, 1947 to June 30, 1948

WORK COMPLETEDBoard of Education - School Buildings

Abraham Lincoln high - boring of test holes	\$ 477.75
Aptos Junior high - additions	55,234.19
Balboa high - repair fire damage to machine shop	30,160.70
Columbus - repairs	14,272.30
Commodore Stockton - general construction, play yard area	36,319.20
High School of Commerce - repairs to auditorium seats	4,828.70
James Lick Jr. high - refinishing gymnasium floors	1,424.00
Lowell high - new plaster cornice	10,373.00
Lake Merced - general construction of additional classrooms and yard	25,530.17
Marina Junior high - installation of asbestos curtain	3,780.00
Paul Revere - resurfacing stair treads and landings	1,080.00
Polytechnic high - resurfacing stair treads and installation of cork pinning spaces	4,521.00 32,681.75
San Francisco Junior College - horticultural facilities, construction and completion of all alterations and structural changes in West Campus addition	92,706.94 67,227.40
San Miguel Elementary - alterations	8,338.75
Sheridan and Starr King - general construction of Standard portable frame classrooms	19,092.00
Sheridan - moving, underpinning and reconditioning one portable classroom	5,828.39
Trade School building site - boring test holes	269.75
Various sites - general construction to construct government prefabricated steel buildings for use as classrooms	70,922.40
Yerba Buena - resurfacing stair treads and landings	<u>910.00</u>
Total	<u>\$485,978.39</u>

Painting work - School buildingsInterior

Commodore Sloat	\$11,842.00
High School of Commerce	25,559.50
James Lick Jr. high - boys' and girls' gymnasium	9,766.00
Laguna Honda	7,777.00
Marshall	7,815.24
Polytechnic high	58,902.37
Sheridan	8,825.00
Yerba Buena	<u>5,300.00</u>

\$135,787.11

Exterior

Abraham Lincoln high	\$ 3,024.00
Bryant - waterproofing and painting	8,162.00
Daniel Webster	4,192.00
Denman Jr. high	5,341.96
Golden Gate	3,220.00
Hillcrest	2,266.00
Le Conte	2,743.00
Miraloma	1,661.00
Patrick Henry	3,529.99
Portola Jr. high	6,280.88
San Francisco Junior College	21,063.75
Samuel Gompers Trade School - waterproofing and painting	<u>16,225.00</u>

\$77,709.58

Interior and exterior painting

Lincoln	\$10,907.34
Paul Revere	<u>10,290.00</u>
	\$21,197.34

Roofing

Daniel Webster - new roof	\$ 5,093.95
Galileo high - repairs to roof	5,460.00
Junipero Serra - repairs to roof	16,441.00
Lowell high - roof repairs	9,455.00
Polytechnic high - new composition shingle roof on Shop Building	<u>8,621.00</u>
	\$45,070.95

Department of HealthSan Francisco Hospital

Nurses' Home, Administration Building, Tubercular, Isolation Building. Replacement of cold and hot water piping systems	\$96,442.00
Children's Ward - 5th floor, Ward Bldg. #2 - plumbing work for new lavatories	6,119.00
Administration building - repairs and alterations	22,786.25
Tubercular and Isolation Buildings - hot water heaters, pumps, piping systems, etc.	<u>18,900.00</u>
	\$144,247.25

Laguna Honda Home

Stainless steel shelving and alterations for dining room and bread room	\$ 6,464.00
Exterior painting - Ward buildings B, C, D, and G	<u>8,047.00</u>
	\$14,511.00

Miscellaneous

Central Emergency Hospital - alterations to ambulance entrance	\$ 7, 156.30
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Fire Department

Radio Transmitter Station	\$ 2,589.00
Boring test holes, 19th and Polson Streets	630.20
Engine House No. 44 - new sheet metal roof	3,148.00
Engine House No. 15 - interior and exterior painting	2,940.00
Pumping Station No. 1 - installation of steel walkways, railings and guards	4,951.00
repairing the smokestacks	<u>4,297.00</u>
	\$18,555.20

Police Department

Potrero Police Station - repairs	\$ 9,273.60
Richmond Police Station - repairs	19,930.45
Northern Police Station and Central Police Station	<u>51,006.45</u>
	\$80,210.50

City Hall

Law Library, Fourth floor - shelving	\$ 1,997.00
" " " " " "	1,989.50
Painting exterior iron work	7,088.41
Telephone Exchange room - air conditioning equipment	3,208.00
Alterations to Assessor's office	5,106.00
Basement - construction and completion of Central Permit Bureau storeroom	11,098.50
Alterations providing addressograph room	7,872.00
Alterations to rooms 215, 215a, and 218	<u>3,896.70</u>
	\$42,256.11

Civic Center

City Planning Commission, 100 Larkin St. - alterations	\$22,085.78
Civic Auditorium, Third floor - new partition	1,297.00
Civic Auditorium - magnesite floor	<u>942.00</u>
	\$24,324.78

Sheriff

County Jail No. 2 (San Mateo County) - insulating warm air ducts	\$ 3,364.00
San Francisco Women's Jail No. 4 (San Mateo County) - plaster repairs	300.00
Hall of Justice and County Jail No. 1 - switchboard work	<u>3,398.00</u>
	\$ 7,062.00

Juvenile Court

Log Cabin Ranch, LaHonda - farm group buildings and road work	\$47,972.15
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Miscellaneous

Elevator repairs at Hall of Justice, 750 Kearny Street County Jails, Nos. 1 and 3, Dunbar Alley City Morgue, 650 Merchant Street	\$ 5,354.47
North Point Sewage Treatment Plant Architectural services	<u>8,870.00</u>
	\$14,224.47

CONTRACTS UNDER CONSTRUCTION AND WORK IN PROGRESSBoard of EducationSchool Buildings (General)

City College of San Francisco - West Campus - temporary classrooms	\$ 7,965.00
reinstallation of bronze lettering	840.00
Edison - alterations to entrance	1,297.00
Madison - repairing acoustical tile	1,568.00
Polytechnic high - alterations and additions to heating system	12,117.00
Roosevelt Junior high - auditorium lighting system	4,500.00
San Francisco Junior College - alterations to rooms 3, 55 and 56	11,389.00
Sunshine - reconstruct skylights over classrooms	34,797.00
Ulloa - 2 portable prefabricated classrooms, 1 store- room and moving 1 classroom from Grattan School to Ulloa School	<u>18,000.00</u>
	\$92,473.00

Prefabricated Classrooms

Burnett - moving, underpinning and reconditioning 1 portable frame classroom	\$ 3,760.00
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Various Schools

Portable prefabricated classrooms	
Franklin	1
Sheridan	1
Jefferson	1
Guadalupe	2
Edward Robeson Taylor	2
Bayview	2
	80,128.77

Visitation - general construction of prefabricated classrooms	<u>97,387.00</u>
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\$181,275.77

Roofing

Argonne - repairs	\$ 3,949.00
Garfield - alterations	17,900.00
George Washington high - repairs - shop building	571.00
Guadalupe - repairs	4,130.00
Horace Mann - repairs	2,670.00
Jefferson - repairs	2,728.00
LeConte - repairs	5,483.00
Sunnyside - alterations	10,654.00
Sutro - alterations	<u>12,637.00</u>
	\$60,722.00

Department of HealthSan Francisco Hospital

Tubercular Building - asphalt tile, cork treads and miscellaneous waterproofing	\$17,977.00
Wards 31 and 32 - steel sash repairing	1,878.00
Service building - alterations and additions	172,516.91
Extension of existing dry sandpipes to property lines	<u>15,997.00</u>
	\$208,368.91

Laguna Honda Home

Alterations to garage (laundry)	\$43,270.00
Oncology Laboratory - Ward K2	23,639.70
Installation of one Plunger electric freight elevator for kitchen building	<u>6,531.00</u>
	\$73,440.70

Miscellaneous

City clinic - new lighting fixtures	\$ 489.00
interior painting	3,209.74
Excelsior Health Center - alterations for new exit	3,557.00
Hassler Health Home - low pressure boiler	10,000.00
heating system	<u>11,185.00</u>
	\$ 28,440.74

Fire Department

Pumping Station No. 1, 698 - 2d Street - installation of firebrick lining	\$ 6,691.25
147 Natoma Street - miscellaneous repairs	<u>2,180.00</u>
	\$ 8,871.25

City Hall

Installation of new vacuum pump	\$ 6,525.00
General exterior repairs	29,999.00
Third floor - 2 new court rooms	<u>42,797.00</u>
	\$79,321.00

Civic Center

Civic Auditorium - 3d floor, asphalt tile flooring, upper gallery - furnishing and installing chairs	\$ 734.00
Larkin Hall	60,421.00
	<u>9,138.31</u>
San Francisco Retirement Board - air conditioning system	4,945.00
San Francisco Main Library - electric lighting in reference, special, and art book rooms	6,588.00
City Planning Commission, 100 Larkin St. -alterations	1,377.00
San Francisco Museum of Art, Veterans War Memorial Building - alterations	<u>117,389.00</u>
	\$200,592.31

Park Department

New greenhouses and alterations and additions to	
Head House, conservatory	\$17,757.00
Kezar Stadium, reconditioning and additions to toilets	40,349.00
DeYoung Museum - replace main service switch, install	
service conductors, lighting panel, etc.	2,190.00
Zoological Gardens, Pachyderm house - alterations, heating and ventilating	<u>9,780.00</u>
	\$70,076.00

Miscellaneous

Legion of Honor Building - metal roof repairs	\$2,990.00
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WORK UNDER PREPARATIONBoard of Education - School Buildings

Abraham Lincoln high - new addition	\$3,500,000.00
City College of San Francisco - mechanical work at	
paint technology laboratory	50,000.00
Francis Scott Key - addition	85,000.00
Grant - additional playground area	40,000.00
Horace Mann Junior high - plastering arcade ceiling	3,708.38
James Lick Jr. high - cast stone repairs	2,575.00
Lawton - alterations and additions	325,000.00
Mission high - repairs to roof play area	4,128.00
Vocational school (alterations to Ford Building) -	
remodelling and alterations to building	1,750,000.00
General school repairs	
Fire Department recommendations for repairs to	
approximately thirty schools	<u>300,000.00</u>
	\$6,060,411.38

Prefabricated portable classrooms

Double Rock	82,000.00
Ridge Point, Sites 3 and 4	165,000.00
San Miguel	30,000.00
Ulloa	<u>28,000.00</u>
	\$ 305,000.00

Department of HealthSan Francisco Hospital

Chest clinic - lighting fixtures	\$ 489.00
Tubercular Building - interior painting	34,824.00
- miscellaneous repairs	<u>55,597.00</u>
	\$90,910.00

Laguna Honda Home

Alterations to Wards M and E and main kitchen	\$22,534.00
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Fire Department

Engine No. 10	\$220,000.00
Engine No. 11	210,000.00
Engine No. 27	255,000.00
Engine No. 30	.. . . .	249,000.00
Engine No. 12	.. . . .	82,000.00
Engine No. 14	.. . . .	255,000.00
		<u>\$1,271,000.00</u>

Sunset Community Center

Junior High School	.. . . .	\$500,000.00
Sunset Elementary School	.. . . .	350,000.00
Recreation Field and Community Center	.. . . .	275,000.00
Branch Library	.. . . .	175,000.00
Health Building	.. . . .	85,000.00

No progress has been made on above, as
we are awaiting appointment of architect
on Elementary School.

\$1,385,000.00

City Hall

Information booth, main lobby	\$ 4,000.00
Sandwich shop	25,823.00
Civil Service - alterations	<u>21,797.00</u>
	\$ 51,620.00

Civic Center

Recreation Department - alterations for offices in Civic Auditorium	\$ 50,000.00
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Juvenile Court

Youth Guidance Center	\$2,957,911.00
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Miscellaneous

Department of Public Works Maintenance Yard	\$ 800,000.00
Public Welfare Building, 585 Bush Street - general construction of new entrance and elevator	58,923.00
Hyde Street Pumping Station - architectural supervision	265.00
Richmond-Sunset Sewage Treatment Plant - architectural supervision	<u>100.00</u>
	\$859,288.00

RECAPITULATIONWork Completed

Board of Education	\$765,743.37	
Department of Health	165,914.55	
Fire Department	18,555.20	
Police Department	80,210.50	
City Hall and Civic Center	66,580.89	
Sheriff	7,062.00	
Juvenile Court	47,972.15	
Miscellaneous	<u>14,224.47</u>	\$1,166,263.13

Contracts under Construction
and Work in Progress

Board of Education	\$334,470.77	
Department of Health	310,250.35	
Fire Department	8,871.25	
City Hall and Civic Center	279,913.31	
Park Department	70,076.00	
Miscellaneous	<u>2,990.00</u>	1,006,571.68

Work under Preparation

Board of Education	\$6,365,411.38	
Department of Health	113,444.00	
Fire Department	1,271,000.00	
Sunset Community Center	1,385,000.00	
City Hall and Civic Center	101,620.00	
Juvenile Court	2,957,911.00	
Miscellaneous	<u>859,288.00</u>	13,053,674.38
Grand Total		\$15,226,509.19

APPENDIX III

POST-WAR STATE AID

Table I

Active Application to State for Planning Assistance
Total of 19 Applications - as of June 30, 1948

State No	Project	<u>Construction</u> Cost		<u>Plan Cost</u> After		State Half
		<u>Incl.</u>	<u>Plans</u>	<u>Total</u>	<u>July '44</u>	
SEWERS						
*74	Lake Merced Dist.	\$ 2,600,000		\$ 78,000	\$ 78,000	\$ 39,000
80	18th St. Dist. A,B,C	560,000		17,000	4,000	2,000
*81	Lake St. Dist.	830,000		30,000	10,000	5,000
82	Islais Creek Dist.	400,000		12,000	12,000	6,000
84	Lower Market St. Dist.	460,000		12,000	12,000	6,000
86	Commercial St. Dist.	140,000		4,000	4,000	2,000
87	Ingleside Dist. Sec. C	125,000		3,750	2,826	1,413
90	14th St., Valencia- Dolores	60,000		2,000	2,000	1,000
*91	23d St. 3d to Iowa	35,000		2,000	2,000	1,000
94	7th St. under the SPRR tracks		7,000	400	400	200
*99	North Point Plant	14,500,000		600,000	600,000	195,000
99A	" "					105,000
832	48th Ave. & Fulton	105,000		6,300	6,300	3,150
834	Franklin St.	<u>136,000</u>		<u>4,000</u>	<u>4,000</u>	<u>2,000</u>
Sub-total						
Sewer Projects		\$19,958,000		\$771,450	\$737,526	\$368,763

HIGHWAYS

*102	Army, San Jose Ave. - Guerrero & Clipper	\$ 1,011,000		\$ 55,000	\$ 22,000	\$ 11,000
104	Portola Drive	3,154,000		173,000	140,000	70,000
*106	13th St. -Market-Bryant	220,000		13,200	13,200	6,600
*108	Monterey Blvd.	245,000		17,500	14,255	7,127
109	Stanley Underpass	260,000		15,000	10,411	5,206
*110	Mission Viaduct - reconstruction	220,000		14,000	10,934	5,467
Sub-total						
Highway Projects		\$ 5,110,000		\$ 287,700	\$210,800	\$105,400

GRAND TOTAL

19 Active Projects \$25,068,000 \$1,059,150 \$948,326 \$474,163

* Projects on which partial
payments have been received.

Table II

Planning Applications - Statement of Revisions
From June 30, 1947 to June 30, 1948

Total of 31 applications June 30, 1947 \$479,870.74

DEDUCT ALLOCATIONS -
FINAL PAYMENTS 1947-48

77 Lower Islais Creek-Alemany	\$ 500.00
87 Ingleside Dist. Sec. B	587.49
93 46th Ave. & Lincoln Div.	1,000.00
831 Hyde St. Pumping Station	2,580.00
833 21st Florida-20th St. Sewer	<u>700.00</u>

Total allocations -	
Final payments 1947-1948	\$ 5,367.49

APPLICATIONS CANCELLED

Sewers - Cancelled under
Res. No. 7498

83 Jackson St. District	\$ 5,000.00
85 Front & Green Sts.	2,000.00
95 Hunters Point Sewer Ext.	6,900.00
96 Hunters Point Sewer Tunnel	6,600.00
Cancelled under App.#78 (by reversion)	
78 Upper Army St. Sewer Dist. Sec. C	<u>340.74</u>

Total Sewer Applications cancelled	20,840.74
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Highways - Cancelled under
Res. No. 7499

105 Broadway tunnel	\$45,000.00
107 6th St. viaduct	38,000.00
111 Bay Shore Boulevard	<u>1,500.00</u>

Total Highway Applications cancelled	84,500.00
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TOTAL DECREASES IN APPLICATIONS	<u>110,708.23</u>
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TOTAL APPLICATIONS LESS DECREASES	\$369,162.51
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99 Application increase by
amending North Point Sewage
Treatment Plant

New total	\$300,000.00
Amount of old application	<u>195,000.00</u>
Application increase	<u>105,000.00</u>

NET AMOUNT OF REMAINING 19 APPLICATIONS JUNE 30, 1948	\$474,162.51
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Table III

Planning Applications - Reimbursement Received - 1947-48

State No.	Planning Projects	Allocation	Payments Received		
			%	Amount	Date
SEWERS					
74	Lake Merced Dist.	\$39,000.00	25	\$ 9,750.00	8/22/47
77	Lower Islais Creek - Alemany	500.00	100	500.00	7/18/47
81	Lake St. Dist.	5,000.00	25	1,250.00	8/22/47
87	Ingleside Dist. Sec. B	587.49	100	587.49	8/25/47
88	29th Street	1,500.00	Refund	-433.60	9/10/47
89	Pine & Broderick Sts.	1,500.00	"	-317.58	9/10/47
93	46th Ave. & Lincoln Div.	1,000.00	100	1,000.00	10/15/47
99	North Point Plant	(195,000.00	(2nd	53,058.24	9/3/47
99A	" "	(105,000.00	(3d	29,323.17	11/5/47
831	Hyde St. Pump. Station	2,580.00	100	2,424.33	10/22/47
833	21st St., Florida St., 20th St.	700.00	100	700.00	10/22/47
Total Planning Projects (Final & Partial Payments)		\$352,367.49		\$97,842.05	

Table IV

Active Application to State for Construction Assistance
Total of 9 Projects - as of June 30, 1948

State No.	Project	State's Share	Resolution Series of 1939	
			No.	Date
4	Richmond-Sunset Plant			
	Enlargement	\$ 461,608.50	5604	6/26/46
26	Seventh Street Outfall	4,200.00	5665	7/8/46
27	23d Street Sewer	23,200.00	5665	7/8/46
28	Lake St. District, Sewer A	150,000.00	5665	7/8/46
321	Alemany Sewer, Sec. G	129,000.00	6439	4/21/47
647	North Point Pretreatment and Sedimentation	2,138,050.00	7050	12/1/47
648	Sludge Treatment Plant at Islais Creek	1,550,000.00	7050	12/1/47
649	M.P.P. Influent and Effluent Sewers	300,000.00	7050	12/1/47
		\$4,756,058.50		
831	Islais Creek Bridge (not yet approved)	398,383.79	7504	5/17/48
Total Active Projects		\$5,154,442.29		

Table V

Construction Claims - Reimbursements Received 1947-48

State No.	Date of Claim	P a y m e n t s		R e c e i v e d	
		Amount	Date Paid	*Audit	
FINAL CLAIMS					
29	46th Ave. & Lincoln Way	\$ 14,760.05	3/17/48	None	
31A	Vicente St. Outfall	37,849.52	12/10/47	6/21/48	
	" "	45,169.35	5/24/48	6/21/48	
285	Caselli Ave. Sewer	21,928.05	12/10/47	5/5/48	
	" "	10,071.95	3/17/48	5/5/48	
	" "	10,801.97	2/24/48	5/5/48	
429	St. Charles Ave.	89,338.59	2/2/48	2/4/48	
430	Lake Merced, Sec. A	43,644.60	2/2/48	2/4/48	
431	Upper Army, Sec. A	356,645.99	6/16/48	6/23/48	
432	Scott St., Sec. BC AD	19,204.85	12/10/47	1/6/48	
433	Hampshire St.	41,289.30	2/2/48	2/4/48	
434	Army St. San Bruno to Potrero	60,956.49	12/26/47	1/6/48	
435	Ingleside, Sec. B	23,869.42	2/4/48	2/9/48	
436	Baker St. Outfall				
	Sub-total, final claims paid	\$775,530.13			
PARTIAL CLAIMS					
4	Richmond-Sunset Sewage Treat- ment Plant Enlargement	78,542.20	9/12/47		
	" "	57,804.57	12/19/47		
321	Alemany, Sec. G	33,874.05	3/4/48		
	" "	32,402.13	5/27/48		
TOTAL CONSTRUCTION REIMBURSEMENT		\$978,153.08			

*Date of audit by State Controller

TABLE I
SEWAGE PUMPING STATION CAPACITIES, ETC.

Name of Station & Location	Units	Type	Size of Pump		Discharge Inches	Total Capacity		Rated Horse Power	Rated Voltage	Rated Speed R.P.M.	Year Built	Approx. Contract Cost		Sewage is Pumped into
			ft.	Head		G.P.M.	Each					100/60	440	
Marina nr Casa Way	4	Horizontal	70	34	10	4350	2600	100/60	440	870/695	1937	\$140,000		N.Pt. Outfall from Pierce
	1	Single Stage	34		10			30	440	870				St. Sever
Park Merced	2	2-Horizontal	131		6	1800		50	440	1170	1944	60,000		Eucalyptus Dr. Stanley St.
Lake Merced Blvd.		Single Stage Pumps in Series	144			2500								Sever from Division
Commercial St. nr Drumm St.	3	Vertical	20		6	2100		25	220	870	1905	20,000		N.Pt. Main nr Lower
	1	Horizontal						Engine Driven			1908	10,000		Market St. Richmond-Sun-
Sea Cliff #2 nr Sea Cliff Drive	2	Single Stage	29		4	1050		15	220	1600	1945	3,550		set Sever Tunnel at 25th Ave & Lake St.
	1	Single Stage Pumping unit	100		4	650		25	220	1750	1940	57,500		
		2-Horizontal Single Stage Pumps in series												
Vicente at Gt. Highway	2	Vertical	140		5	1400		40	220	1150				Sunset Interceptor from Dist. nr Sloat Blvd. & Gt. Hwy. Bayview Main from Shore
	6	Single stage	50		6	900		25	230	870	1928	4,500		
Fitzgerald nr Griffith	1	Vertical	47		4	350		15	220	1750		20,000		
		Single Stage												
St. Cliff #1 nr Sea Cliff Dr.	1	Ditto	54		4	460		15	220	1165	1929	2,660		Area #2 from China Beach Area
	2	Vertical	51		4	530		15	220	1150		1,750		Sunset Interceptor from Pinelake Park N.Pt. Outfall from Beach St.
Pine Lake nr Crestlake & Wavona Drs	1	Vertical	57		3	170		5	220	1750	1944	1,500		
		Single Stage												
Hyde St. at Jefferson	2	Vertical	29		4	310		5	220	860	1948	44,500		Sever
		Vertical												force main
Lakeshore Pk. - Lake Merced Blvd.	2	Vertical	96		5	1300		50	440	1150	1947	35,000		Eucalyptus Dr. excluding Sever from Stanley St. Diver'n

*Submerged pump. All pumps are centrifugal type, motordriven, unless otherwise noted.

SEWAGE PUMPING STATIONS - OPERATING RECORDS

Table II

MARINA SEWAGE PUMPING STATION

CONTRIBUTING POPULATION - 63,000 DISTRICT AREA - 1,025 ACRES

AVERAGE NET OPERATING HEAD - 38.0 FT

Month	PUMPAGE IN MILLION GALLONS:				Power - K.W.H.		K.W.H.	
	Total per Month	Daily Aver- age	Max. per day	Min. per Day	Consumed By Pumps Per Month	Consumed by Lights & Auxil's. Per Month	per Million foot Gallons	per Million foot Gallons
July, 1947	187.1	6.03	6.275	4.337	34560	2416	4.87	4.87
Aug	178.5	5.74	10.812	4.675	34000	2424	5.01	5.01
Sept	176.0	5.86	6.650	4.587	31680	2025	4.74	4.74
Oct	194.3	6.25	8.375	4.875	34560	1570	4.69	4.69
Nov	185.2	6.17	8.962	4.462	34000	1862	4.85	4.85
Dec	187.9	6.03	9.950	3.362	35520	2828	4.98	4.98
Jan., 1948	193.4	6.23	8.787	3.462	36920	1828	5.03	5.03
Feb	188.3	6.48	9.625	5.175	35800	1900	5.01	5.01
Mar	204.4	6.58	9.662	5.662	38400	1554	4.95	4.95
Apr	174.4	5.80	7.046	3.387	33000	1560	4.92	4.92
May	179.3	5.78	7.412	5.212	34040	1754	4.99	4.99
June	166.4	5.54	6.075	4.075	32040	1860	5.07	5.07

Total								
Per Year	2215.2	6.04	{ Daily Average		414520	23581	4.93	(Average
			Average Overall Efficiency of each Pump and its Motor - 63%					

Table III

COMMERCIAL STREET SEWAGE PUMPING STATION

CONTRIBUTING POPULATION - 14,000				DISTRICT AREA - 92.5 ACRES			
AVERAGE OPERATING HEAD - 20.0 FT.							
PUMPAGE IN MILLION GALLONS:				Power - K.W.H.			
Month	Total per Month	Daily Aver- age	Max. per Day	Min. per Day	Million Foot Gallons per Month	Consumed by Pumps per Month	
						Consumed by Lights & Auxil's.	K. W. H. per Million foot Gallons
July, 1947	22.14	.71	.92	.52	442.8	3070	510
Aug	19.98	.64	.84	.60	399.6	2710	430
Sep	19.81	.66	.83	.48	396.2	2860	476
Oct	21.87	.75	.85	.64	437.4	2920	430
Nov	20.43	.68	.85	.49	408.6	2980	440
Dec	25.99	.84	1.14	.66	519.8	3190	480
Jan., 1948	19.80	.66	No data		396.0	4000	532
Feb	16.92	.58	.88	.46	338.4	4360	624
Mar	22.82	.73	.98	.69	456.4	3010	382
Apr	21.68	.72	.96	.72	433.6	2890	338
May	19.70	.63	.86	.72	394.0	2890	370
June	21.54	.71	.93	.60	430.8	2890	400
Total Per Year	252.68	.69	(Daily Average)		5053.6	37770	5412
							7.62 (Average)

Average Overall Efficiency of Each Pump and Motor - 44.8%

*A break occurred January 24, 1948 on the force-main and a temporary discharge line was utilized during the repair period.

TABLE IV

SEACLIFF SEWAGE PUMPING STATION NO. 1

CONTRIBUTING POPULATION - 50				AVERAGE OPERATING HEAD 49.0 FEET				DISTRICT AREA - 4 ACRES			
PUMPING IN MILLION GALLONS:				Million foot Gallons per Month		Power - K.W.H. Consumed by Pumps per Month		K.W.H. Consumed by Lights & Auxil's. per Month		K.W.H. per Million foot Gallons	
Month	Total per Month	Daily Average	Max. per Day	Min. per Day	Data not available						
July, 1947	.0413	.0013			Data not available	13	2.023	2.0		6.60	
Aug	.0360	.0012				11.0	1.764	3.0		6.63	
Sep	.0535	.0021				17	2.621	3		6.58	
Oct	.0657	.0021				21	3.219	2		6.54	
Nov	.0749	.0025				24	3.670	2		6.53	
Dec	.0826	.0026				26	4.047	2		6.57	
Jan., 1948	.0901	.0030				27	4.414	2		6.62	
Feb	.0816	.0029				26	3.998	2		6.64	
Mar	.1007	.0034				32	5.034	2		6.52	
Apr	.0938	.0031				30	4.606	2		6.54	
May	.0848	.0027				27	4.145	4		6.57	
June	.0662	.0022				21	3.243	2		6.65	
Total Per Year	.8712	.0024	{Daily Average			275	42.784	28		6.58 (Average)	

Average Overall Efficiency of Each Pump and Motor - 46.5%

TABLE V

SEACLIFF SEWAGE PUMPING STATION NO. 2

DISTRICT AREA - 83.4 ACRES

CONTRIBUTING POPULATION - 2400

AVERAGE OPERATING HEAD 94.0 FEET

PUMPAGE IN MILLION GALLONS:			Million Foot Gallons per Month	Power - K.W.H.		K.W.H. per Million Foot Gallons
Month	Total per Month	Daily Aver- age		Consumed by Pumps per Month	Consumed by Lights & Auxil' s. Per Month	
July, 1947	3.95	.127	371	2239	641	6.03
Aug	3.61	.119	339	2052	628	6.05
Sep	3.98	.128	376	2478	722	6.05
Oct	3.92	.126	368	2220	660	6.04
Nov	4.62	.149	434	2632	728	6.07
Dec	3.92	.126	368	2210	2270	6.04
Jan., 1948	4.26	.137	410	2492	1988	6.06
Feb	4.57	.147	400	2438	2672	6.01
Mar	1.45	.133	136	818	2862	6.10
Apr	4.95	.160	465	2840	520	6.09
May	4.65	.150	437	2662	858	6.04
June	3.88	.125	365	2204	520	
Total per Year	47.76	.135 (Daily Average)	4469	27275	15069	6.05 (Average)

Average Overall Efficiency of Each Pump and Motor - 51.8%

Station by-passed 20 days March 1948 - due to repair of Richmond Tunnel

Table VI

PARKMERGED SEWAGE PUMPING STATION

CONTRIBUTING POPULATION - 7,500 DISTRICT AREA - 83.4 ACRES

AVERAGE OPERATING HEAD - 123.0 FT

PUMPAGE IN MILLION GALLONS:				Million Foot Gallons per Month		Power - K.W.H. Consumed by Pumps per Month		K. W. H. Consumed per Million foot Gallons	
Month	Total per Month	Daily Average	Max. per Day	Min. per Day					
July, 1947	11.98	.385	.445	.354	1473.5	8120	2120	5.50	
Aug	11.87	.382	.483	.311	1460.0	8050	1760	5.51	
Sep	12.20	.408	.449	.305	1500.6	8230	2650	5.49	
Oct	10.90	.364	.442	.313	1340.7	7320	1640	5.46	
Nov	12.72	.424	.475	.350	1564.5	8580	1020	5.49	
Dec	13.00	.419	.473	.365	1599.0	8740	2460	5.48	
Jan., 1948	11.40	.368	.463	.323	1402.2	7680	2560	5.50	
Feb	10.52	.362	.458	.390	1300.1	7160	2120	5.51	
Mar	9.81	.286	.456	.344	1206.6	6600	2240	5.50	
Apr	10.13	.336	.456	.361	1245.9	6860	2100	5.52	
May	12.71	.410	.443	.359	1563.3	8610	990	5.51	
June	12.88	.429	.467	.403	1584.2	8680	920	5.49	
Total Per Year	140.12	.381	{Daily Average		17240.6	94630	22580	5.49	(Average)

Average Overall Efficiency of Each Pump and Motor - 56.8%

Table VII

VICENTE SEWAGE PUMPING STATION

DISTRICT AREA - 51.4 ACRES

CONTRIBUTING POPULATION - 1,950

AVERAGE OPERATING HEAD - 56.0 FT

Month	PUMPAGE IN MILLION GALLONS:				Million Foot Gallons per Month	Power - K.W.H.		K. W. H. per Million foot Gallons
	Total per Month	Daily Aver- age	Max. per Day	Min. per Day		Consumed by Pumps per Month	Consumed by Lights & Auxil's per Month	
July, 1947	4.68	.151			262.0	1842	39	7.03
Aug	4.32	.139			241.9	1700	36	7.03
Sept	3.38	.140	Data not		189.2	1340	40	7.08
Oct	4.17	.135			233.5	1650	42	7.06
Nov	3.88	.130	available		217.2	1530	42	7.05
Dec	4.16	.134			232.9	1663	41	7.04
Jan., 1948	4.20	.135			235.2	1652	42	7.03
Feb	4.34	.149			243.0	1732	38	7.06
Mar	4.47	.144			250.3	1769	32	7.07
Apr	4.62	.154			238.7	1697	34	7.07
May	4.64	.150			253.8	1839	35	7.08
June	4.80	.160			268.8	1903	36	7.08
Total Per Year	51.66	.143	Daily (Average)		2872.5	20317	457	7.06 (Average)

Average Overall Efficiency of Each Pump and Motor - 44.5%
 Station by-passed 6 days in September
 (Construction work on storm sewer. Vicente outfall)

Table VIII

FITZGERALD SEWAGE PUMPING STATION

CONTRIBUTING POPULATION - 800 DISTRICT AREA - 30 ACRES

AVERAGE OPERATING HEAD - 48.0 FT.

PUMPAGE IN MILLION GALLONS:					Power - K.W.H.		K. W. H.
Month	Total per Month	Daily Aver- age	Max. per Day	Min. per Day	Million Foot Gallons per Month	Consumed	Million foot Gallons
						by Pumps per Month		Consumed by Lights & Auxil's per Month
July, 1947	2.60	.084			124.80	Negligible	8.50
Aug	1.91	.065			91.68	780	7.23
Sept	1.62	.054			77.76	660	8.48
Oct	2.36	.076		Data not	113.28	960	8.53
Nov	2.54	.084		available	121.92	1040	8.58
Dec	2.72	.087			130.56	1120	8.57
Jan., 1948	2.59	.083			124.32	760	6.15
Feb	1.35	.046			64.80	500	7.73
Mar	1.74	.055			83.52	700	8.38
Apr	1.77	.059			84.96	720	8.50
May	1.77	.057			84.96	720	8.50
June	1.78	.059			85.44	730	8.56
Total Per Year	24.75	.067	{Daily Average		1188.00	9750	8.14 (Average)

Average Overall Efficiency of Each Pump and Motor - 41.7%

Table IX

PINELAKE SEWAGE PUMPING STATION

CONTRIBUTING POPULATION - 25

DISTRICT AREA - 3 ACRES

AVERAGE OPERATING HEAD - 56.0 FT.

PUMPAGE IN MILLION GALLONS:				Million Foot Gallons per Month	Power - K.W.H. Consumed by Pumps per Month		K. W. H. per Million foot Gallons
Month	Total per Month	Daily Aver- age	Max. per Day		Consumed by Pumps per Month	by Lights & Auxil's per Month	
July, 1947	.0198	.00063		1.108	10	Negligible	9.03
Aug	.0316	.00102		1.766	15		9.03
Sep	.0380	.00126	Data not	2.128	18		8.88
Oct	.0357	.00115		1.999	17		8.90
Nov	.0294	.00098	available	1.636	16		9.06
Dec	.0399	.00128		2.234	20		9.00
Jan., 1948	.0357	.00115		1.999	18		9.20
Feb	.0362	.00125		2.027	18		9.45
Mar	.0360	.00116		2.016	19		9.65
Apr	.0406	.00135		2.273	22		9.90
May	.0144	.00072		0.806	8		10.50
June	.0027	.00027		0.151	2		
Total Per Year	.3600	.00101	(Daily Average)	20.143	183		9.38 (Average)

Average Overall Efficiency of Each Pump and Motor - 35.4%
 Station by-passed 30 days during May and June 1948
 (Breakage in main force line)

Table X

SEWAGE PUMPING STATIONS
COST OF OPERATION
FISCAL YEAR 1947-48

Item of Cost	S		T		A		T	I	O	N	S	Fitz- gerald	Pine- Lake	Hyde St.	Lake- shore Pk.
	Marina	Commercial	Sea Cliff No. 1	Cliff No. 2	Park- merced	Vicente									
Salaries	\$10,052.00	\$7,855.00	\$100.00	\$4,057.00	\$4,057.00	\$ 635.00	\$ 635.00	\$100.00	\$50.00	\$50.00	\$50.00				
Contractual Services	1,810.00	710.00	65.00	576.00	690.00	367.00	566.00	25.00	-	-	-				
Equipment							200.00								
Replacements	165.00	298.00													
Materials & Supplies	846.00	207.00	13.00	155.00	89.00	85.00	46.00	12.00	-	-	-				
Heat, Light & Power	5,873.23	947.06	8.60	867.20	2,108.03	388.40	194.80	4.18	-	-	-				
	\$18,746.23	\$10,017.06	\$186.60	\$5,655.20	\$6,944.03	\$1,475.40	\$1,641.80	\$141.18	\$50.00	\$50.00	\$50.00				
Additions & Improvments	\$ 265.00	\$ 598.00	-	\$150.00	\$320.00	\$345.00	\$400.00	-	-	-	-				
Cost of Operation per M.G.	6.46	39.64	117.67	118.40	49.62	23.33	66.33	392.00	-	-	-				
Cost of Operation per capita	.29	.71	3.73	2.35	.92	.61	2.05	5.64							

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

COST OF OPERATION

Item of Expenditure	Total Plant Operation	Sewage Treatment with Chlorination	Sunset Pumping Plant	Sludge Disposal Conditioning & Filtration	Sewage Treatment without Chlorination
Permanent Salaries	\$ 55,979	\$35,333	\$ 7,761	\$12,885	\$30,877
Holidays	906	660	93	153	594
Overtime	97	65	12	20	58
Temporary Salaries	4,255	3,333	354	568	3,056
Wages	11,071	6,723	1,313	3,035	6,156
Contractual Services	7,492*	4,870	1,124	1,498	4,870
Heat, Light & Power	9,840	4,921	3,857	1,062	4,322
Materials & Supplies	23,796*	20,476	604	2,716	5,426
Totals	\$113,436	\$76,381	\$15,118	\$21,937	\$55,359
Richmond Flow (gravity) 2,196 MG					
Sunset Flow (pumped) 1,484 MG					
Total 3,680 MG					
Cost of Operation per MG	\$30.83 For 3680 MG	\$20.75 For 3680 MG	\$10.19 For 1484 MG	\$5.96 For 3680 MG	\$15.04 For 3680 MG

Estimated cost per capita
(based on 210,000 population)

\$0.54 per year

3,453 cu yd filter cake, estimated value \$17,265, delivered to City Parks during year for use as fertilizer

The plant was shut down approximately 13 days to allow contractors to works on plant enlargements. In addition, the Sunset pumping plant was shut down during storms in order to avoid handling excessive quantities of sand in the sump.

Additional Expenditures

Plant Improvements	\$1,380*
Painting	2,510*
Office Engineering	97
New Equipment	160
	<u>\$4,147</u>

* Estimated

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 1 - SEWAGE TREATMENT DATA (Cont'd)

Month	Alkalinity as CaCO ₃ , DPM		Chlorides, ppm		Sewage Temp Op	Screenings, cu ft	Grease, Gallons Pumped	Sand, cu yd		Chlorination, lb	
	Raw	Eff	Raw	Eff				Pre-Treat	Sun-set	Pre	Post
July 1947	190	185	55	60	70	352	25,100	28	12	11,130	26,020
Aug	195	200	54	58	71	364	27,900	31	10	9,540	27,890
Sept	200	200	57	62	73	346	27,000	34	18	8,270	27,650
Oct	175	175	56	55	71	410	25,100	78	25	8,990	23,090
Nov	200	190	52	55	67	436	26,000	58	19	9,830	26,500
Dec	185	180	52	57	66	340	16,700	46	15	6,570	16,640
Jan 1948	190	170	48	50	66	476	21,300	34	47	10,280	24,170
Feb	160	145	50	50	66	464	26,100	79	40	9,140	21,140
Mar	160	155	46	46	65	518	25,100	74	37	7,320	16,710
Apr	155	155	46	47	66	546	21,700	89	47	8,960	11,720
May	190	185	55	59	67	562	27,900	99	71	10,190	29,400
June	190	190	64	71	67	503	27,000	70	60	9,940	28,510
Totals	185	180	53	56	68	5,317	296,900	770	401	111,160	279,440
Wt Avg***											

* Removed by Pre-Treatment bar racks only; screenings from Sunset sump not included.

** Approximate removals from grit-grease tanks; additional removals in Mixing and Sedimentation Building not included.

*** Weighted averages calculated from total flows by months.

Pre-Chlorination - 30 lbs per million gallons

Post-Chlorination - 9 AM to 6 PM, 100 lbs per million gallons

6 PM to 9 AM, 80 " "

No post-chlorination when Sunset flow by-passed.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 2 - SLUDGE TO DIGESTER AND GAS PRODUCTION

Month	Raw Sludge to Digester				Metered Gas Production - cu ft*			Digester Temp of
	Gallons	% Total Solids	Dry Sol- lbs	% Volatile	Volatile lb	To Boilers	To Waste	
July 1947	1,188,200	4.37	436,500	83.1	362,600	1,821,800	1,226,000	92
Aug	1,362,000	4.46	510,200	83.1	424,000	2,031,900	2,244,100	94
Sept	1,376,300	4.58	529,600	83.6	442,600	2,065,400	2,042,600	96
Oct	1,290,100	4.79	519,300	83.9	435,500	2,033,800	1,705,800	95
Nov	1,507,000	4.39	554,400	84.2	466,600	2,010,500	2,035,700	92
Dec	926,500	4.00	311,400	85.6	266,400	1,308,500	899,800	92
Jan 1948	1,638,000	4.04	555,700	86.0	477,700	1,890,000	1,716,900	91
Feb	1,248,400	4.14	433,800	85.5	370,700	1,816,700	1,132,400	86
Mar	1,060,500	3.97	353,600	85.0	300,400	1,427,700**	1,010,800**	87
Apr	865,300	4.10	297,600	82.9	246,800	1,450,100	367,500	85
May	1,768,800	3.96	587,100	84.5	496,100	1,600,300	1,342,600	88
June	1,900,400	4.00	638,500	83.4	532,300	1,126,300	1,424,100	83
Totals	16,127,500		5,727,700		4,821,700	20,583,000	17,147,700	90
Wt Avg***		4.23		84.2			37,730,700	

* Some leakage occurs at digester seal.

** Gas wasted to atmosphere without metering from March 10th to 16th while installing temporary lines over digester replacing line inside digester which failed on March 10th.

*** Based on accumulated totals for year. All raw sludge computed at 8.40 pounds per gallon.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT
TABLE 3 - DIGESTED SLUDGE TO ELUTRIATION

Month	Sludge, Thousands of Gallons		% Total Solids		Dry Solids, Thousands of lb	
	Supnt	Bottom	Supnt	Bottom	Supnt	Bottom
July 1947	1594.3	434.5	.35	3.39	46.4	123.7
Aug	2214.4	23.9	1.19	3.30	218.4	7.8
Sept	2156.2	26.6	1.08	3.25	193.7	7.9
Oct	1995.2	80.0	.61	3.62	132.7	25.7
Nov	2146.3	25.6	.99	3.62	176.7	7.8
Dec	1347.2	9.6	.82	4.22	91.4	3.5
Jan	1951.5	139.1	.78	3.48	126.3	40.6
Feb	1697.6	74.5	.60	3.60	84.3	22.5
Mar	1444.6	239.5	.57	3.50	68.8	70.4
Apr	1481.5	114.3	.28	3.61	34.3	34.7
May	1798.6	181.6	.41	3.15	61.3	48.0
June*						
Totals	19827.8	1352.0	.75	3.46	1235.3	392.6
Wt Avg**						1627.9

* Sludge transferred to new primary digester while elutriation system out of service for contractual changes.

** Based on accumulated totals for year. All supernatant sludge from digester computed at 8.31 pounds per gallon, and all bottom sludge at 8.40 pounds per gallon.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 3 - DIGESTED SLUDGE TO ELUTRIATION (Cont'd)

Month	% Volatile		Volatile, Thousands of lb		Avg Alk As CaCO ₃ , ppm	Solids To Elut To Dig
	Supnt	Bottom	Supnt	Bottom		
July 1947	63.4	65.6	29.4	81.1	1600	.39
Aug	66.1	62.4	144.3	4.9	2000	.44
Sept	64.1	68.4	124.0	3.4	1810	.38
Oct	63.8	64.4	85.4	16.5	1740	.31
Nov	65.3	63.2	115.4	5.0	1830	.33
Dec	66.0	66.4	60.3	2.3	1650	.30
Jan	67.0	65.1	84.6	26.5	1520	.30
Feb	67.2	67.7	56.7	15.3	1500	.25
Mar	66.8	66.9	46.0	47.1	1450	.39
Apr	63.5	66.1	21.8	22.9	1020	.23
May	65.2	67.7	40.0	32.5	1130	.19
June*						
Totals	65.4	66.0	807.9	259.5		
Wt Avg**					1590	.31

* Sludge transferred to new primary digester while elutriation system out of service for contractual changes.

** Based on accumulated totals for year.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 4 - VACUUM FILTER OPERATION

Month	M Gallons	% Solids	Solids M lb	% Volatile	Volatile M lb	Ash M lb	Volatile Ash	Alk as CaCO ₃ , ppm
July 1947	421.5	3.46	124.6	66.4	82.7	41.9	1.97	320
Aug	745.2	3.39	214.2	66.4	142.2	72.0	1.98	415
Sept	723.8	2.99	177.4	66.8	118.5	58.9	2.01	415
Oct	584.9	2.91	143.8	66.4	95.4	48.4	1.97	380
Nov	564.0	2.99	142.6	67.3	96.0	46.6	2.06	430
Dec	256.1	3.18	68.9	68.5	47.2	21.7	2.13	365
Jan 1948	492.5	3.36	139.8	68.9	96.3	43.5	2.22	340
Feb	307.4	3.60	93.7	69.4	65.0	28.7	2.26	335
Mar	398.8	3.58	121.0	69.5	84.0	37.0	2.27	315
Apr	231.1	3.62	70.8	66.8	47.4	23.4	2.02	320
May	277.7	3.58	84.3	68.7	57.9	26.4	2.19	335
June*								
Totals	5003.0	3.26	1381.1	67.5	932.6	448.5	2.08	365
Wt Avg**								

* Vacuum filtration system out of service for contractual changes.

** Based on accumulated totals for year.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 4 - VACUUM FILTER OPERATION (Cont'd)

Month	lb FeCl ₃	% FeCl ₃ on Solids	Hours Filter Operated	lb Solids		Filter Cake Water %	Filter Cake M lb	Gallons Sludge Filtered Per hr	Fil- trate M lb Per hr	Filter Cake cu yd
				Per hr	Per sq ft Filter					
July 1947	3960	3.18	116.43	1090	5.45	74.4	496.9	3610	26.3	346
Aug	8190	3.82	206.10	1060	5.30	75.2	863.9	3620	26.5	601
Sept	8090	4.56	200.60	910	4.55	74.0	704.5	3600	27.0	508
Oct	5710	3.97	171.67	870	4.35	72.8	547.4	3400	25.6	424
Nov	5830	4.08	165.83	880	4.40	75.3	594.1	3400	25.2	390
Dec	2940	4.27	77.03	920	4.60	75.4	287.4	3330	28.0	169
Jan	5040	3.61	150.23	950	4.75	75.0	571.9	3280	23.9	418
Feb	3310	3.54	97.89	980	4.90	74.6	376.6	3140	23.4	308
Mar	2780	2.30	112.13	1100	5.50	71.6	445.1	3550	26.1	340
Apr	1310	1.85	67.26	1070	5.35	71.6	252.3	3440	25.2	200
May	2000	2.37	78.83	1090	5.45	73.1	317.7	3580	25.8	237
June*										
Totals	49160	3.56	1444.00	980	4.90	74.1	5457.8	3460	25.5	3941**
Wt Avg***										

* Vacuum filtration system out of service for contractual charges.

** 3453 cu yd to City Parks

468 cu yd to Public

*** Based on accumulated totals for year.

BLOCK AND STREET DIMENSIONSTYPICAL BLOCK SIZES50 Vara District

The early subdivisions in San Francisco were laid out in "varas", a Spanish unit of measurement equivalent to 33 inches or 2.75 feet. The so-called "50 Vara District" bounded by Market Street, Larkin Street, and the Embarcadero was laid out to provide lots having a depth of 50 varas or 137.5 feet in the north and south direction. This gave a block width of 100 varas, or 275 feet. The length east and west was made 150 varas, or 412.50 feet. Streets were usually given a width of 25 varas or 68.75 feet in both directions but there are a number of exceptions.

100 Vara District

In the "100 Vara District" which extends from Market Street to the Channel and from the water front to 9th Street, the blocks have a length of 200 varas or 550 feet along the numbered streets. In the direction parallel to Market Street the blocks from First Street to 8th Street have a length of 300 varas, or 825 feet. The blocks in this area are just twice as large each way as those north of Market Street and, consequently, have an area four times as great. In that part of the "100 Vara District" lying between First Street and the water front, the blocks have a width of 100 varas or 275 feet in the direction parallel to Market Street. In the "100 Vara District" the streets were laid out with a uniform width of 30 varas, or 82.5 feet, in both directions.

Western Addition

The Western Addition extends westerly from the "50 Vara District" to Arguello Boulevard, being bounded on the south by Waller Street and Golden Gate Park, and on the north by the Presidio and Golden Gate. This whole area was laid out in the same manner as the "50 Vara District" and, consequently, the blocks are 275 feet x

412.50 feet and the streets normally 68.75 feet in width.

Other subdivisions

Block sizes vary greatly in other parts of the City, widths in general being not less than 200 feet, and lengths varying between 400 and 970 feet. The following tables give typical block dimensions in some of the principal districts of the City and the widths of a number of the main streets and boulevards.

<u>District</u>	<u>BLOCK DIMENSIONS</u>	
	<u>Length in feet</u>	
	<u>N. & S.</u>	<u>E. & W.</u>
50 Vara District	275	412.50
100 Vara District		
9th St. to 1st St.	550	825
1st St. to Embarcadero	550	275
Western Addition	275	412.50
Richmond District	600	240
Mission District	600	240
Potrero District	400	200
South San Francisco District	200	600

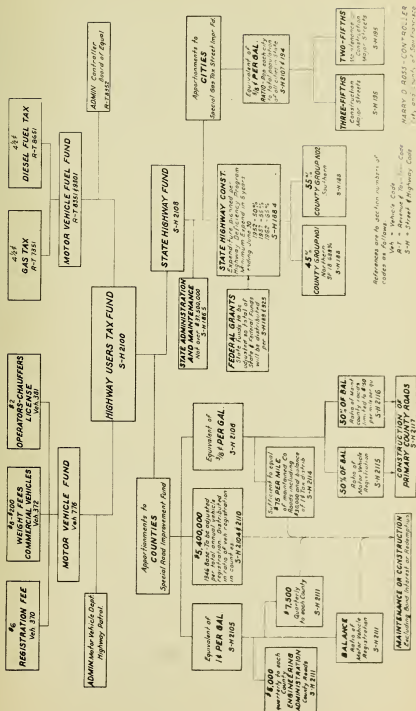
<u>District</u>	<u>TYPICAL STREET WIDTHS</u>	
	<u>(Including sidewalks)</u>	
	<u>Width in feet</u>	
50 Vara District	68.75	
Western Addition	68.75	
100 Vara District	82.50	
Richmond & Sunset Districts		
North and South streets	70.00	
East and West streets	80.00	
Mission District		
Main North and South streets	82.50	
East and West streets	64.00	
Potrero District		
North and South streets	80.00	
East and West streets	66.00	
South San Francisco District		
Avenues (E. and W.)	80.00	
Streets (N. and S.)	64.00	

WIDTH OF MAIN STREETS AND BOULEVARDS
(Including sidewalks)

<u>Street</u>	<u>Width in feet</u>
Embarcadero	200
Portola Drive:	
Twin Peaks Blvd. to Evelyn Way	160
Evelyn Way to West Portola Avenue	70
24th St. to Twin Peaks Boulevard	100
19th Avenue:	
South of Eucalyptus Drive	140
North of Eucalyptus Drive	100
Sloat Boulevard	135
Van Ness Avenue	125
Geary Boulevard	125
Bayshore Boulevard	125
Junipero Serra Boulevard	125
Market Street	120
3d Street, Channel to Bayshore Boulevard	100
Potrero Avenue	100
Alemaný Boulevard	100
California Street	
East of 8th Avenue	85
West of 8th Avenue to 33d Avenue	80
Broadway	82.5
Ocean Avenue	80

COUNTY ROADS-STATE HIGHWAYS-CITY STREETS

Tax Structure and Apportionment—Assembly Bill No. 46 approved by Governor 6-22-47



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ANNUAL REPORT
OF THE
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF
SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30, 1949



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ANNUAL REPORT
OF THE
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30, 1949

ELMER E. ROBINSON

MAYOR

THOMAS A. BROOKS

CHIEF ADMINISTRATIVE OFFICER

HARRY C. VENSANO

DIRECTOR OF PUBLIC WORKS



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CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS

OFFICE OF THE
DIRECTOR OF PUBLIC WORKS

November 1, 1949

280 CITY HALL
SAN FRANCISCO 2,
CALIFORNIA

The Honorable Thomas A. Brooks
Chief Administrative Officer
City and County of San Francisco
California

Dear Sir:

In accordance with the provisions of Section 20 of the Charter of the City and County of San Francisco, I herewith submit the Annual Report of the Department of Public Works for the fiscal year ending June 30, 1949.

This department is responsible for the planning, construction, and maintenance of public buildings, streets, tunnels, bridges, traffic control devices, sewers, and sewage treatment plants. The department is also responsible for the operation of the sewerage system, and supervises all private building work. The various functions of the department are performed by nine bureaus, as indicated by the accompanying organization chart. The personnel of the department consisted of 1191 employees at the end of the fiscal year.

Following a general review of the Department's work during the last seven years, the report contains separate statements of the functions and activities of the several bureaus during the past year as prepared by the respective bureau heads.

Yours respectfully,

H. C. Vensano

H. C. Vensano, Director
Department of Public Works

SSK

CORRECTIONS

Page 6, 2nd Paragraph, 2nd Line -
Period should be a comma and The should read the.

2nd Paragraph, 10th Line -
adbisable should read advisable.

Page 34-
Interchange captions under photographs.

Page 64-
Number of Carloads 10,073 should be under 1947
instead of under 1948

Page 99-
In table headed Cost of Operating Municipal Asphalt
Plant, Output (Tons) - \$ signs should be omitted.

Bottom of Page - Tonnage - \$ signs should be omitted.

Pages 66 & 117-
Organization Charts should be interchanged.

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MAYOR
ELMER E. ROBINSON

**CHIEF
ADMINISTRATIVE
OFFICER**
THOS. A. BROOKS

ORGANIZATION CHART

DEPARTMENT OF PUBLIC WORKS 1948-1949

CITY AND COUNTY OF SAN FRANCISCO

DEPARTMENT OF PUBLIC WORKS
DIRECTOR H.C. VENSANO
ASS'T DIRECTOR SIDNEY J. HESTER

GENERAL OFFICE

BUREAU OF ENGINEERING
CITY ENGINEER RALPH G. WADSWORTH

BUREAU OF ARCHITECTURE
CITY ARCHITECT DODGE REIDY

BUREAU OF BUILDING INSPECTION
SUPERINTENDENT (Acting) LESTER C. BUSH

BUREAU OF STREETS
GENERAL SUPERINTENDENT (Acting) W.S. MERRILL

BUREAU OF SEWER REPAIR
SUPERINTENDENT EMILE MUHEIM

BUREAU OF BUILDING REPAIR
SUPERINTENDENT RODERICK CHISHOLM

BUREAU OF ACCOUNTS
SUPERVISOR FRANK W. MCKENZIE

CENTRAL PERMIT BUREAU
SUPERVISOR SYLVAN J. ROSENBLUM

DEPARTMENT OF PUBLIC WORKS
H. C. Vensano, Director

DIRECTOR'S STATEMENT

In view of my contemplated early resignation, I would like to take this opportunity to review the accomplishments of the Public Works Department since my inauguration as its Director on October 1, 1942. During a part of this time the United States was engaged in a world war which brought about major changes in location of population, major limitations on materials of construction and major changes in cost of construction, all of which made the operations of the Department of Public Works difficult. During the period from 1942 to the end of the war in 1945, shortages of manpower existed in all lines of work.

The operations of a city are unavoidable and continuous. With the shortage of manpower and increase in population, the productivity of the individual employee of necessity had to be materially increased to even approximate the normally desirable results of our operations, such as street cleaning, street repair, building repair, and sewer repair. The meeting of the ordinary needs of the city was a major accomplishment in itself. However, within the period of 1942 to date important advances have, I believe, been made in the operation of the Department.

BUREAU OF STREETS

a) Cleaning

In the Street Cleaning Division of the Bureau of Streets, Saturday and Sunday partial shift work was introduced at overtime rates of pay. Some time previous to 1942 week-end operations had been in effect but had been discontinued when a provision for double time was forced on the city by unionized groups. When Saturday and Sunday work was discontinued, the debris rapidly accumulated over week-ends, and as a result the city was very dirty, not only on Saturdays and Sundays, but also on Mondays and part of Tuesdays, before the regular crews could catch up with their work. In 1943 this condition was corrected by the introduction of part-time skeletonized Saturday and Sunday crews which included about one-third of the regular week day pay personnel. In spite of the small size of this organization, reasonably satisfactory results have been obtained.

In 1942 the conditions on Market Street were particularly bad. In the windy season in particular the sidewalk on the north side of Market Street was literally covered with scrap paper and small debris at almost all times. The sidewalks on the south side were not. This difference in conditions on the two sides of the street brought about a study of wind conditions. By tests with materials dropped as far west as Van Ness Avenue

it was ascertained that the waste paper on the north side of Market actually accumulated from areas north, and particularly west of that street; that Market Street with its discontinuous cross-streets formed a buffer to our westerly winds which produced a wind pocket on its north side. The dirty conditions on the north side of that street had been the result of accumulation of paper and other small waste which had been dropped as far west as Franklin Street, and which traveled to points as far east as 4th and Market Streets. (Eastward from 4th and Market on Market Street the Russian Hill ridge cut off the wind and conditions were not so bad.) As a result of their study additional block men were added to our crews in the area northwest of Market Street as far west as Van Ness Avenue.

b) Street Repair

During the war time period our Street Repair crews took over the street repair work of the Utilities Department, which consisted in maintaining the street pavements within the franchise areas of the various car lines. This was no mean accomplishment, since it is to be remembered that at the time we were already short on personnel for our own work, but the Manager of Utilities was entirely unable to keep up his work, having been reduced to a crew of but twelve men in all for the entire work. These men were turned over to the Works Department. Thereafter the pavement in the franchise right-of-ways of the street railroads was done by the Department of Public Works crew under work orders from the Public Utilities Department. This arrangement still continues.

BUREAU OF SEWER REPAIR

In the Bureau of Sewer Repair during this period we undertook to devise and did devise equipment for mechanically cleaning our built-in-place monolithic sewers, and also even some of our larger pipe sewers -- i.e., to an approximate minimum of 18" in diameter. This equipment consists of a bucket specially designed to load through a rear opening, dragged forward by a motorized gas engine with a small jib crane on same chassis; a return pull unit consisting of a portable gas engine; and dollies which are easily installed within the sewer and around which the pulling cable passes. This equipment, with a crew of four men (including driver of truck removing sludge from the street) performs six to eight times as much work as did the same crew formerly by hand methods. The old system, under which about 17 men were supposed to clean 700 miles of sewer by hand, was obviously merely token service and to all practical intent and purpose the sewers were never cleaned except in tidal areas or where actual stoppages occurred. The result of that situation I believe tended to reduce the capacity of our sewer system to below design rating. During our present period of reconstruction and enlargement of

some of our sewer mains, the thought at times arises as to how much less reconstruction might have been sufficient had our sewers been properly cleaned during previous years.

At the present time sewer cleaning is an entirely mechanized operation except for one crew, for the mechanization of which it has as yet been impossible to obtain budgeted funds.

As of July 1, 1949 the operating personnel of the Sewage Treatment Plants will be transferred to this Bureau. Following the unification of these groups under the Bureau of Sewer Repair, it is the intent to rename the bureau the "Bureau of Sanitation".

BUREAU OF BUILDING REPAIR

The volume of repair and alteration work performed annually by the Bureau of Building Repair has increased from a total of \$647,050 in 1943/1944 to a total of \$1,197,277 in 1948/1949, with a corresponding increase in the number of building trades mechanics employed of from 144 to 207 men. (See Tables A & B page 8 for details)

CENTRAL PERMIT BUREAU & BUREAU OF BUILDING INSPECTION

These bureaus gave peak performance in the fiscal year of 1948/1949, issuing permits for and inspecting private building construction to a total value of \$77,802,043 against \$12,121,829 in 1943/1944. Total personnel increased only from 18 to 36 in the corresponding period.

This was the first full year in which the new building code of 1947 was effectively put into operation. This was done entirely successfully, with little opposition or criticism from the public and apparently was well received by the outside business interests, considering the amount of opposition previous to its enactment. Under the provisions of this code it is mandatory upon the Director of Public Works to reopen it for discussion bi-annually. The first of such reviews should therefore occur in the latter part of 1949 and such weaknesses as have developed can be readily corrected at that time.

ADMINISTRATIVE PROBLEMS

The fiscal year 1948-1949 was a very difficult year for the administrative staff of the Department of Public Works and those of the Engineering and Architectural Bureaus. In the previous year two Bond Issues, the Street Improvement Bonds \$22,850,000 (Nov. 1947) & the Sewage Treatment Bonds in amount of \$15,000,000 (May 1948) were voted. To the latter amount had been added all funds coming to the City from the "Construction and Employment Act" (Chapter 20, Statutes of 1946, as amended) amounting to

approximately \$8,000,000, giving in all \$23,000,000 for Sewage Treatment Plant construction. A \$48,000,000 Bond Issue for School Construction was also voted.

This tremendous program of construction has swamped the administrative officials of the Department, as well as the limited number of engineering and architectural designers available for it. The Department of Public Works, it should be remembered, is largely an organization set up to operate and maintain our city facilities (rather than for construction purposes). It was not in 1944 organized to handle a large construction program. At no time since 1944 when the first \$12,000,000 Sewer Bond Issue was passed have any relaxations been made either in our laws, civil service rules, or other restrictive measures controlling the employment of technical personnel in order to obtain outside help. While the existing laws and rules governing employment of personnel are presumably satisfactory for normal purposes, they are not designed for and do not at all fit the needs for expanding or creating the large staff of professional engineers and architects required to meet the needs of the major construction program called for by these large Bond Issues. It has been found most difficult to obtain the additional designers and other top talent necessary for such program under existing regulations and ordinances.

The citizenry having voted these Bond Issues, are of course impatient to see results. The resulting pressure upon all branches of city government, including the Board of Education, is great, and upon the Public Works Department has become excessive, and destructive of efficiency. Each group desires its particular favorite project constructed immediately.

In view of these handicaps both the Engineering and Architectural Bureaus, have we believe, made remarkable progress in our construction programs.

BUREAU OF ENGINEERING

The work of the Bureau of Engineering has expanded rapidly since the termination of the war. Numerous new subdivisions were received for review and approval. Street improvement work was undertaken on a large scale in connection with new housing projects. The growth of traffic called for investigations and plans for relieving congestion and promoting safety. A number of major streets were widened to give more traffic capacity. Following a bond issue in 1944, numerous major sewers were constructed and extended. A program of sewage treatment plant design and construction was started in 1947 and rapidly prosecuted after passage of additional bond funds in 1948. Major street projects were authorized by a large bond issue in November 1947.

The spectacular increase in amount of construction work

designed and put under contract annually by the Bureau of Engineering in spite of all difficulties can be visualized by reference to the following table:

FISCAL YEAR	AMOUNT OF WORK TO CONTRACT
1942/1943	\$ 867,940.89
1943/1944	432,398.70
1944/1945	524,324.27
1945/1946	4,027,446.12
1946/1947	2,042,818.18
1947/1948	2,983,833.56
1948/1949	\$15,708,985.88

SOUTHEAST SEWAGE TREATMENT PLANT

Another item of major interest was the awarding of a design contract for the Southeast Sewage Treatment Plant. Due to manpower shortage in our own Bureau of Engineering, a contract for the production of plans and specifications for the Southeast Sewage Treatment Plant was awarded the Engineering Office of Clyde C. Kennedy in amount of \$190,000.

BUREAU OF ARCHITECTURE

When in November 1948 the \$48,890,000 School Bond Issue was voted and the Board of Education decided to put the administration of design and construction under the management of the Works Department, the Bureau of Architecture had a staff of but ten office employees. While it was the intention to award all major units of this program to outside architects, (no other program would have been feasible) the supervisory duties of our Bureau were such that it became evident that this small staff would have to be increased by about 18 additional office employments. Such an expansion immediately called for additional floor space and additional furniture. Floor space was finally obtained from the Utilities Commission at 45 Hyde Street. These quarters have been revamped, a part of the furniture obtained, and the first five additional employees hired. Such a program of reorganization, even under the freedom of private enterprise would require several months.

In the meantime while all routine functions of the Architectural Bureau have had to be continued, the Board of Education under pressure itself from the public, awarded twelve architectural contracts, creating a tremendous load on our small personnel and handicapping our efforts to complete our expansion.

However, at the end of the fiscal year the design program is rapidly beginning to take shape though additional professional personnel are still badly needed.

Details of the regular work of the Bureau will be found hereinafter under the appropriate section.

TRANSPORTATION PLAN FOR SAN FRANCISCO

The traffic and transportation investigations under way during the early portion of the year by Ladislas Sego & Associates, Consulting City Planners, and DeLeuw, Cather & Company, Consulting Engineers, in conjunction with the staffs of the City Planning Commission and our Bureau of Engineering were brought to conclusion by the issuance of a report entitled "Transportation Plan for San Francisco" dated November 1948. This report was to have been studied by the Technical Committee and the Mayor's Administrative Transportation Planning Council, which sponsored the program, and put into final shape for submission to the Mayor. Unfortunately, the sponsoring bodies have been abolished so there is no definite sponsor for the report.

The report has been under study and consideration by our Bureau of Engineering. The City Planning Commission, and other interested departments of the City government. However, to the end of the fiscal year no joint action toward its adoption either in whole or in part has been taken. Progress in our transportation program demands that some decision be reached as soon as possible fixing at least a skeleton outline for our freeways and mass transportation facilities. The Director believes that while it is probably impossible, if not unwise, to adopt the entire program of the (DeLeuw-Sego) report, it is possible and advisable to adopt its major features with such modifications as can be agreed upon by the interested parties of the City government. If expenditures of gas tax funds are to be wisely made by the Department of Public Works, immediate steps should be taken by the administration to set up a body to coordinate the ideas of the City Planning Commission, Public Works Department, Utilities Department, and Police Department, together with such others as may be primarily interested. As long as the City remains without an accepted Master Plan much money will be wasted in disorganized efforts to "improve" traffic conditions.

SECOND BAY CROSSING

During this year much time and study was spent in the matter of the Second Bay Crossing of San Francisco Bay. The controversy between the representatives of the State Department of Public Works and the City of San Francisco as to whether a crossing paralleling the existing San Francisco-Oakland Bay Bridge be built, or a more southerly crossing be constructed, wages furiously and was carried into the State Legislature via the Dolwig Committee. This committee employed three nationally known consultants, Messers. Theodore T. McCroskey, Ole Singstad, and O. H. Amman, all of New York, who recommended a sort of compromise program for the construction of a four-lane Southern Crossing combined with a reconstruction of the present San

Francisco-Oakland Bridge which would widen and also increase the number of vehicular traffic lanes. Their recommendation was included in a report entitled, "Report on San Francisco Bay Vehicular Crossings Prepared for Assembly Interim Committee on Reclamation of Tidelands and Related Traffic Problems of the Legislature of the State of California," dated May 25, 1949. Representatives of the City lead by Supervisor Marvin Lewis and the Chief Administrative Officer, Mr. T. A. Brooks, including representatives of the City Planning Commission and the Department of Public Works, took part in the discussions before the Dolwig Committee.

BUDGET ANALYSIS

In our annual report for the fiscal year of 1945/1946 on Page 9, were given budgetary statistics. Hereinafter in Table C and D, I am extending that study to the year 1948/1949. It should be noted that during the period from 1941 to 1949 the population of our city grew from 634,536 to approximately 816,000 an increase of about 30%. The statistics in Table D indicate that during this same period the staff of budget employees increased only from 691 to 754, or 9.4%. Remembering that the administrative and top officials in the department are all budgeted employees and that no increase occurred in this group and that almost \$100,000,000 worth of a Bond Issue program was superimposed upon their normal work loads, it must be evident to almost anyone that a very heavy burden was placed upon them.

Another interesting fact which would appear from column 8, of Table C would seem to indicate that since of the 26.8% increase shown, only 9.4% can be accounted for by increase in personnel, the balance of 17.4% increase has been due to rise in prices of materials and supplies and contractual services. Since the price of these items is beyond the control of the administrative officials of the department, it might be said that the whole increase in ordinary operation and maintenance which would be expected to increase about as population, or say 30%, was actually taken care of by the staff of the department with an increase of but 9.4%, a fact upon which I believe we may congratulate ourselves.

CONCLUSION

The Director feels that 1948/1949 has been a successful year for the Department of Public Works and that all Bureaus have performed their functions creditably.

H. B. Venzano Director

Department of Public Works

Table A
BUREAU OF BUILDING REPAIR
- REPAIRS - ALTERATIONS -

MONTH	1943-44	1943-44	1948-49	1948-49
	INTER- DEPARTMENTAL	GENERAL FUND	INTER- DEPARTMENTAL	GENERAL FUND
July	\$ 37,841	\$ 10,094	\$ 64,107	\$ 15,502
August	45,572	9,112	75,462	12,607
September	41,869	10,035	72,108	12,448
October	42,394	11,261	73,644	12,227
November	41,431	9,517	83,488	16,432
December	45,259	10,772	83,076	17,008
January	41,836	10,685	86,065	15,353
February	43,312	10,355	85,128	14,541
March	47,586	10,485	102,751	15,988
April	44,668	9,434	99,062	14,487
May	48,598	9,880	92,734	14,335
June	45,412	9,642	103,130	15,594
TOTALS	\$525,778	\$121,272	\$1,020,755	\$176,522
	\$647,050.		\$1,197,277.	
	1943-44		1948-49	

Table B
BUREAU OF BUILDING REPAIR

CRAFT	1943-44	1948-49
Carpenter	26	30
Cement Finisher	6	6
Cement Helper	5	10
Electricians	11	24
Glazier	5	7
Locksmith	2	7
Laborer	2	2
Painter	41	50
Plumber	21	32
Sheet Metal	10	19
Steamfitter	12	16
Plasterer	2	3
Tilessetter	1	1
TOTALS	144	207

BUDGETARY STATISTICS
TABLE C

(1) Fiscal Year	(2) Total Budget	(3) Capital Appropriation	(4) Equipment	(5) Net Operating Budget	(6) Wages Increases Etc.	(7) Operating Budget at 1941 Wage Rates	(8) Percent Increase Since 1941
1941-42	\$2,390,226	\$ 420,000	\$ 20,075	\$1,950,151	\$	\$1,950,151	
1942-43	2,135,859	100,000	1,340	2,034,519	36,863	1,997,656	2.4%
1943-44	2,868,965	638,000	107,870	2,123,095	119,572	1,966,660	1 %
1944-45	3,880,650	1,590,200	51,265	2,259,185	51,016	2,051,734	5.2%
1945-46	3,956,340	1,530,000	10,415	2,415,925	37,230	2,171,244	11.3%
1946-47	12,128,439	9,329,101	53,289	2,746,049	409,671	2,201,610	12.8%
1947-48	3,375,932	506,000	100,250	2,769,682	314,815	2,349,277	20.4%
1948-49	3,566,801	493,150	65,750	3,007,901	222,957	2,474,592	26.8%

TABLE D

Budget Employees	1941-42	1945-46	1946-47	1947-48	1948-49
General Office	17	16	15	15	15
Architect	1	4	5	6	6
Accounts	11	15	15	15	15
Building Repair	149	151	152	154	154
Building Inspection	19	15	20	26	28
Engineering	60	59	59	59	59
Richmond Plant	18	17	17	17	17
Pumping Station	5	6	7	7	7
Central Permit	7	5	8	8	9
Street Cleaning	317	325	323	326	326
Sewers	87	110	112	118	118
TOTAL NUMBER of Budget Employees	691	723	733	751	754

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

ORGANIZATION CHART
1948-1949

CITY ENGINEER
ASST CITY ENGINEER

STAFF SECTIONS

ADMINISTRATION
CONTRACTS-PERSONNEL-
PURCHASING

SURVEYS & MAPPING
STREET GRADES
SUBDIVISIONS

STAFF SECTIONS

RESEARCH & REPORTS
FRANCHISE REPORTS
RESEARCH-SANITARY FILL

PROGRAMS & BUDGETS
STATE AID-PLANNING
PROGRAMS

LINE DIVISIONS

DIVISION OF
STREETS & HIGHWAYS

- 1-STREET IMPROVEMENTS
 - (a) PLANS & RECORDS
 - (b) ASSESSMENTS
 - (c) PERMITS & INSPECTIONS
- 2-HIGHWAYS
- 3-TRAFFIC & SAFETY
- 4-TRACK REMOVAL CONTRACTS
- 5-SPECIAL ASSIGNMENTS

DIVISION OF
DESIGN

- 1-STRUCTURAL
- 2-SEWERS
- 3-SEWAGE DISPOSAL
- 4-MECHANICAL
- 5-ELECTRICAL
- 6-ESTIMATES
- 7-UNDERGROUND STRUCTURES
- 8-ADMINISTRATIVE & CONTRACTS

LINE DIVISIONS

DIVISION OF
CONSTRUCTION

- 1-INSPECTION
- 2-TESTING LABORATORY

RICHMOND-SUNSET
SEWAGE TREATMENT PLANT

- 1-LABORATORY
- 2-OPERATION

BUREAU OF ENGINEERING
Ralph G. Wadsworth, City Engineer

FUNCTIONS OF THE BUREAU

The work of the Bureau of Engineering was primarily concerned with highways, boulevards, streets, bridges, viaducts, sewers, sewage disposal, and operation of the Richmond-Sunset sewage treatment plant and eleven sewage pumping stations. In connection with all major improvements carried out by the Department of Public Works, except those relating to public buildings, the Bureau of Engineering prepares plans and specifications and supervises construction in the field. The Bureau also performs many continuing functions related to street improvements, traffic control, street name signs, spur tracks, sidewalks and structures, auxiliary water supply system, garbage disposal, surveys, subdivisions, and maintenance of maps and records for public information. A more detailed listing of these functions will be found under the heading "Organization and Duties."

GENERAL REVIEW OF YEAR'S WORK

GENERAL

The year was marked by a great expansion of the construction program resulting in a heavy work load on both design and field engineering staffs. Special emphasis was placed on projects authorized by recent bond issues and as a consequence the normal street and highway program was somewhat retarded. New street improvements, paid for by property owners, continued at a high level. The survey staff was necessarily increased to meet the needs of the construction program and to comply with requests from the Recreation Department and the Board of Education for surveys of new building sites.

CONTRACT VOLUME

The total volume of construction work in the field of streets, sewers, and sewage treatment under the supervision of the Bureau of Engineering, reached the highest level ever recorded by the department since the re-organization brought about by the new charter in 1932. The total value of all contracts awarded and authorized was \$15,708,985.88 an amount which is nearly four times as large as the previous record year of 1946.

The largest single contract was for the construction of the North Point Sewage Treatment Plant, the contract price being \$8,289,525. If this amount is excluded from the total contract awards for the year, there still remains \$7,419,461 worth of work, which is nearly twice the previous record.

MAJOR PROJECTS STARTED

Among the more important projects undertaken during the year were the following:

- North Point Sewage Treatment Plant
- Lake Merced Sewer, Outlet Tunnel and Lake Crossing
- Lake St. Sewer, Section A. (through Presidio)
- Islais Creek Bridge at 3rd St.
- Track Removal and Street resurfacing (13 contracts)
- Gough St. Extension, Market St. to Otis St.
- Masonic Ave. Extension, Geary Blvd. northerly
- Anza St. Widening, Parker Ave. to Masonic Ave.
- Traffic Signals at 153 intersections

ORGANIZATION AND DUTIES

The plan of organization of the Bureau was changed slightly during the year. In the Division of Streets and Highways, the Transportation Planning section was abolished upon completion in 1948 of the over-all traffic and transportation study undertaken jointly with other city departments. In the Division of Design, the Auxiliary Water Supply Section was consolidated with the Mechanical Section. The accompanying chart shows the organization as it existed on June 30, 1949. Effective the following day, the operation of the Richmond-Sunset Sewage Treatment Plant was transferred to the Bureau of Sewer Repair, the Bureau of Engineering retaining only technical supervision of plant processes.

The duties performed by the various divisions and sections of the Bureau are briefly summarized in the following outline, which shows also the name and rank of the person who was in charge of each unit on June 30, 1949.

FUNCTIONS OF DIVISIONS AND SECTIONS

DIVISION OF STREETS AND HIGHWAYS-S. P. Duckel, Asst. City Engineer
Improvement, construction and maintenance of streets and major thoroughfares.

Street Improvement Section L. DeCew, Engineer
Original street improvements & street and sidewalk maintenance.

Plan and Record Unit H. L. Reinfeld, Asst. Engr.
Line and grade diagrams for street and sewer work performed under private contract and assessment proceedings.
Records of completed street work and sewer installations.

Assessment Unit L. C. Whaley, Asst. Engr.
Permits for original street improvements and spur tracks.

Proceedings for street improvements and assessment of benefits.

Plans for sidewalk changes and street maintenance.

Permits and Inspections Unit

C. S. Hiden, Asst. Engr.

Inspection of condition and use of streets and sidewalks.

Notification of parties responsible for repair or adjustment.

Recommendations on various permit applications.

Permits for street excavations and inspection of work.

Highway Section

M. D. Johnson, Asst. Engr.

Design of major thoroughfares.

Control of building permits on future rights-of-way.

Traffic Engineering and Safety Section

R. T. Shoaf, Engineer

Reports and recommendations on traffic devices and channelization.

Traffic surveys and records of traffic accidents.

Supervision of traffic striping and installation of traffic signs, bus stops, safety zones, and street signs.

Plans for temporary routing of traffic during construction of streets and sewers.

Reports of damages to City property caused by traffic accidents.

Track Removal Section

J. H. Slater, Engineer

Plans and specifications for removal of abandoned streetcar tracks and reconstruction of streets.

Special Assignment Section

C. V. Patterson, Asst. Engr.

Project statements and records for gas tax projects.

Records of right-of-way purchases.

Assignment and expediting of correspondence within the bureau.

DIVISION OF DESIGN

R. H. Owens, Senior Engineer

Plans and specifications for extensions and improvements of sewers, sewage disposal plants, and auxiliary water supply system.

Structural, electrical, and mechanical plans for all projects of the bureau and occasionally for other bureaus and departments.

Supervision of eleven sewage pumping stations.

Structural Section

N. F. Yde, Engineer

Structural plans for all major projects.

Records of surface and ground water conditions and plans for stabilizing slide areas.

Recommendations for maintenance of about 195 existing structures.

Sewer Section

R. F. Lauenstein, Engineer

Plans for extension and reconstruction of sewers and records of

completed work.

Investigation and recommendations on operation and maintenance.

Review of plans for sewer systems in new subdivisions.

Sewage Disposal Section

M. Anaya, Engineer

Plans for sewage disposal plants & intercepting sewer systems.

Mechanical Section

J. Sanders, Engr.

Plans and specifications for mechanical work on all projects undertaken by the Department of Public Works, and occasionally other departments.

Plans for modification or improvement of Auxiliary Water Supply System.

Electrical Section

Ivan Sandberg, Engineer

Plans and specifications for electrical work on street lighting, traffic signal and sewage and pumping station projects.

Assists in field inspection of electrical construction.

Supervision of sewage pumping stations and tests of equipment.

Underground Structure Section

M. J. Callaghan, Asst. Engr.

Records of underground structures and foundation conditions.

Maps showing existing underground utilities in the vicinity of contemplated improvements.

Review of utility locations in new subdivisions.

Administrative Section

G. Galli, Engineer

Planning and coordinating of work of the Division of Design.

Assembly of plans and specifications and estimates.

Supervision of stenographic services and reference files for bureau.

Estimating Section

C. J. Geertz, Engineer

Preparation of cost estimates for contracts and change orders.

Analysis of final construction costs.

CONSTRUCTION DIVISION

C. M. Taylor, Engineer

Supervision of all construction work under jurisdiction of the bureau.

Inspection Units-various assistant engineers and junior engineers.

Supervision and inspection of contract work including layout as required.

Preparation of daily, weekly, and monthly reports.

Annual inspection of structures under jurisdiction of department.

Testing Laboratory Unit

P. F. Bernard, Engineering Chemist

Physical and mechanical tests of materials used by Department

of Public Works and for several other department.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT B. Benas, Superintendent
Operation and maintenance of treatment plant.
Studies and recommendations for improvements.

ADMINISTRATIVE SECTION L. Glick, Engineer
Contract administration and control, including progress payments
and recommendation of acceptance.
Administrative work of the bureau, including budgets, personnel,
pay-roll and office services.

SURVEYS AND MAPPING SECTION E. J. Cullen, Asst. Engineer
Field surveys for the department and occasionally for other
departments and private parties.
Investigations and reports on property acquisition, street open-
ings and closings, and streets in new subdivisions.
Maintenance of official City maps and records regarding streets.

PROGRAMS AND BUDGETS SECTION A. V. Bowhay, Engineer
Preliminary material for annual budgets and long range programs.
Special studies of street, traffic, and transit problems.
Applications and claims for State Aid.

RESEARCH AND REPORTS SECTION M. H. Levy, Engineer
Reports on franchises and permits.
Supervision and compiling of records on sanitary fill garbage
disposal.
Supervision of progress photographs and maintenance of files.
Preparation of annual and special reports.

PERSONNEL

STAFF INCREASE

The total staff of the Bureau increased from 212 to 246 during the year, a gain of 34 persons. As shown in the following table, the main increase was about equally divided between the office and field engineering staffs.

Personnel at Beginning and End of Fiscal Year

Division	July 1, 1948	June 30, 1949	Increase
Engineering Design and			
Administrative Divisions	103	118	15
Construction Div. (Field)	35	51	16
Survey Div. (Field & Office)	29	32	3
Clerical Staff	22	23	1
Plant Operation Force	23	22	- 1
Totals	212	246	34

The gain was principally accounted for by an increase from 35 to 63 in the number of temporary employees. The number of employees certified to permanent positions increased only from 177 to 183. Of these 183, eleven were holding temporary promotions to higher classifications at the end of the year pending publication of lists of eligibles by the Civil Service Commission. The distribution of both permanent and temporary employees between the principal divisions and according to grades is shown in the following table:

DISTRIBUTION OF PERSONNEL - JUNE 30, 1949

Division and Grade	Permanent	Temporary	Total
Engineering Design and Administrative Divisions			
City Engineer	1		1
Assistant City Engineer	1		1
Senior Engineer	1		1
Engineer	14	1	15
Assistant Engineer II	28	4	32
Assistant Engineer I	2		2
Junior Engineer	11	4	15
Inspector Public Works Construction	2	3	5
Senior Draftsman	8		8
Draftsman	23	6	29
Junior Draftsman	4	4	8
Cartographer	1		1
Sub total	96	22	118
Construction Division (Field)			
Engineer	1		1
Assistant Engineer II	3	1	4
Assistant Engineer I	3	5	8
Junior Engineer	11	17	28
Inspector Public Works Construction	1	8	9
Engineering Chemist	1		1
Sub total	20	31	51
Survey Division (Field & Office)			
Engineer	1		1
Assistant Engineer II	1		1
Assistant Engineer I	0	1	1
Junior Engineer	4		4
Senior Draftsman	1		1
Chief of Party	4	2	6
Instrument Man	3	3	6
Surveyors Field Assistant	4	8	12
Sub total	18	14	32

Bureau of Engineering

17

	Permanent	Temporary	Total
Clerical Staff			
Clerks	5	2	7
Stenographers & Typists	11	4	15
Office Assistant		1	1
Sub Total	16	7	23
Plant Operation Force			
Sewage Treatment Plant	16		16
Pumping Stations	6		6
Sub Total	22		22
Total	172	74	246
Permanent Employees in			
Temporary Positions	11	- 11	
Total Employees	183	63	246

TURNOVER

The net increase of 34 employees shown above gives little indication of the number of personnel changes which occurred during the year. The Civil Service Commission established both promotional and open lists of eligibles for practically all engineering and drafting classifications, which resulted in the promotion of 6 persons already employed in the bureau and the appointment of 12 persons who had not previously worked for the city. In addition 15 temporary emergency employees received permanent appointments. To bring the staff up to desired strength and to fill numerous vacancies caused by resignations and retirements, it was necessary to make many additional emergency appointments pending the adoption of additional civil service lists. During the year 155 requests for certification of eligibles were sent to the Civil Service Commission, 39 of them being for permanent positions.

PERSONNEL LOSSES

Four employees of the Bureau were retired after many years of meritorious service. In addition the Bureau lost two valued employees through death.

Through Retirement	Classification	Length of City Service
William N. Buckley	Assistant Engineer II	40 years
Elmer E. Jordan	Assistant Engineer II	39 years
Alfred L. Scroggy	Junior Engineer	23-1/2 years
Roy G. Banks	Surveyor's Field Asst.	30 years

Through Death	Classification	Length of City Service
John H. Hanly	Junior Engineer	36 years
Carl O. Markle	Instrument Man	21 years

CURRENT CONTRACT DATA

The following tabulation shows the number and value of contracts awarded during the fiscal year 1948-1949 in each of the main categories of construction work. The tabulation also shows in the last column the total value of the work actually performed during the year on all contracts which were active, including those previously awarded. From this tabulation it will be noted that 144 contracts were undertaken having an aggregate value of \$15,708,985.88, and that the value of the work actually performed on contracts under way was \$7,331,263.20.

A detailed listing of the contracts under way during the year will be found in Appendix I. A separate tabulation is given for each of the categories of construction work, the various tables being designated by the letters and figures shown in the first column of the following summary.

SUMMARY
SHOWING ALL CONTRACT WORK AWARDED OR
UNDER WAY
July 1, 1948 to June 30, 1949

Table	Type of Construction	No.	Contracts Awarded 1948 - 1949 Aggregate Value	Amount Expended during Fiscal Year 1948-1949
A	Major Thoroughfares	1	\$ 45,036.06	\$ 407,802.56
B-1	Streets, Private Contracts	35	318,975.00	407,202.00
B-2	Streets, Assessment Proceedings	26	342,944.35	218,241.90
B-3	Streets, Public Con- tracts, City Pay	10	158,457.18	355,924.94
B-4	Street Car Track Removal	13	2,089,620.01	2,538,297.12
C	Traffic Signals and Channelization	12	224,434.22	225,306.59
D-1	Sewers, Pipe, Vitri- fied Clay & Concrete	20	587,499.63	605,204.38
D-2	Sewers, Concrete (Monolithic)	3	2,241,855.85	1,155,973.85
E	Miscellaneous	24	9,700,163.58	1,417,309.86
TOTALS - Awarded and Expended			\$15,708,985.88	\$7,331,263.20

STREETS AND HIGHWAYS

SUMMARY OF STREET CONTRACTS

During the year 50 contracts for street work were awarded aggregating \$2,636,058 and 35 private contracts for street improvements were authorized with a total value of \$318,975. A complete list of these contracts will be found in Tables A, B-1, B-2, B-3 and B-4 of Appendix I. Private street improvement contracts are listed in Table B-1 and City contracts for street improvements to be assessed against property owners are listed in Table B-2. The other tables list various types of City contracts for street work of general benefit.

It will be noted that the number of contracts for street work was about 10 per cent greater than last year and that the total value of all contracts listed was 25 per cent greater.

GOUGH STREET EXTENSION

The extension of Gough Street southerly from Market Street to Otis Street was one of the projects authorized by the 1947 Street Improvement Bond issue. The Contract for this work was awarded to Eaton & Smith on December 22, 1948, and all work was completed by May 27, 1949. This extension provides a connection from Gough Street on the north side of Market to Otis Street, which in turn leads directly into Mission Street.

TRACK REMOVAL WORK

Approximately half of the 1947 Bond Issue amount was earmarked for the removal of abandoned streetcar tracks and the resurfacing of the streets occupied by them. About 90 miles of streets will be improved through this program with funds made available to the Department of Public Works and an additional 10 miles is expected to be improved with funds of the Municipal Railway.

During the fiscal year 1948-1949, 13 contracts were awarded by the Department of Public Works for track removal work covering 19.47 miles of streets and costing approximately \$2,090,000. The individual contracts are listed in Table B-4 of Appendix I.

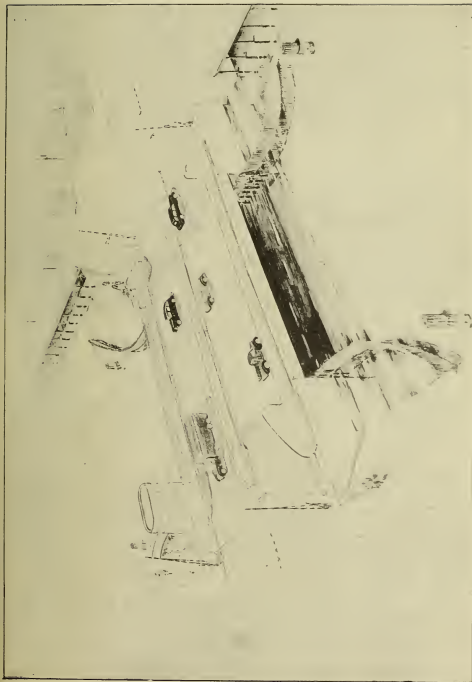
The track removal work completed since the beginning of the program, including the work on Market Street between Kearny and Valencia Streets which was financed in part by the Municipal Railway, aggregates 28.9 miles of street and has cost approximately \$3,000,000. Although about 29% of the total projected mileage has been completed, the cost is only about 25% of the total original estimate indicating that actual construction is costing somewhat less than anticipated.



GOUGH ST. EXTENSION
Market St. Southerly to Otis St.



MASONIC AVENUE EXTENSION
L-Type Reinforced Concrete Wall with Sloping Stem



ISLAIS CREEK BRIDGE

Double Bascule Type with Bearings and Concrete weights below roadway level.

ISLAIS CREEK BRIDGE

Construction of a new bridge across Islais Creek on Third Street was commenced on January 10, 1949, under a contract with the Duncanson-Harrelson Co. calling for completion in one year. The contract price is \$1,214,277. The new bridge will have a 100 ft. clear opening for navigation and will provide six lanes for vehicular traffic as compared with four lanes provided by the old bridge. The structure will be of the double bascule type with bearings and counterweights located below roadway level. This contract is listed in Appendix I under the heading "Miscellaneous" (Table E)

MASONIC AVENUE EXTENSION

Work on the contract for the extension of Masonic Avenue from Geary Boulevard northerly to Laurel Heights Subdivision was begun on December 20, 1948 and was completed about June 1, 1949.

The extension provides a direct route to Presidio Avenue and Bush Street which should relieve the vehicular congestion at Geary Boulevard and Presidio Avenue. Masonic Avenue Extension includes all of former Josephine Street, which was 60 feet wide together with 20 feet of property acquired on the west side in order to make the new street 80 feet in width. The official roadway width of Josephine Street, which was unimproved, was 30 feet. The roadway width of Masonic Avenue Extension is 60 feet.

A portion of the property acquired fronted the reservoir of the Ocean Salt Water Co. and required excavation to depths varying from 3.5 feet to 14.5 feet. In order to support the ground between the reservoir and the street a reinforced concrete L-type retaining wall with sloping stem was constructed.

The amount of the contract was \$35,440.85, \$19,610 of which was for construction of the wall. The latter cost was assumed by the City in exchange for the property required for widening purposes. Approximately \$10,000 of additional City Funds were used on this project, the balance of the cost being assessed against adjoining property. The City's costs were financed from State gas tax funds for major streets.

ANZA STREET WIDENING

Work on a contract for the widening of Anza Street between Masonic Avenue and Parker Avenue began in April, 1949. This project, which is expected to be completed in September, 1949, will provide an additional desirable vehicular route which should relieve the present heavy traffic on Geary Boulevard. The widening required the excavation of about 30,000 cubic yards of material along the northerly base of Lone Mountain. The slopes of the cut and a series of underdrains were planned by Mr. Hyde Forbes, Consulting Geologist, after an exhaustive study of test borings had

been completed. The contract cost is \$110,744.25, approximately \$11,325.00 of which will be assessed against fronting property.

SUBSIDENCE STREETS CONTRACT NO. 2

Several small streets in the South-of-Market Street area, which had subsided to such an extent that sewers failed to function properly, were brought up to official grade, provided with new sewers and repaved. Work began on October 11, 1948, and was completed on April 30, 1949. The total cost was \$63,884.83. The streets in this contract were:

Columbia Square Street, between Folsom Street
and Harrison Street

Trainor Street, between Thirteenth Street and
Fourteenth Street

Erie Street, between Mission Street and Folsom
Street

Dore Street between Harrison Street and Bryant Street was originally included in this contract for re-improvement. It was deleted at the request of the State Division of Highways as most of the fronting property will be acquired for the Bayshore Freeway.

PLANS FOR FUTURE WORK

The various projects financed by the 1947 Street Improvement Bonds were given first priority in the programming of design work during the year. Only the Gough Street extension was actually put under construction but rapid progress was made on the other major projects authorized.

Broadway Tunnel

Plans for the Broadway Tunnel to extend from Mason Street to Larkin Street were developed rapidly during the year and were about 50% complete by June 30, 1949. Some delay was caused by uncertainty as to cooperation of the street railway companies regarding cable car crossings at Hyde Street and at Mason Street and also by differing opinions as to architectural treatment of the approach retaining walls and the ventilating buildings. Final arrangement of service roads and adjustment of street grades were completed and the Real Estate Department was requested to proceed as rapidly as possible with the acquisition of needed land and the adjustment of damages caused by changes in street grades.

The Tunnel will have twin bores about 35' apart, each carrying two 11 foot traffic lanes and one 4 foot sidewalk. The length of tunnel from portal to portal will be 1616 feet and the maximum grade will be 3%. Consulting Engineer Ole Singstad of New York assisted throughout the year in developing the plans.

13th Street Lateral

Plans for the 13th Street highway extending from 11th Street to Mission Street were nearly finished by the end of the year but construction was necessarily deferred awaiting acquisition of right-of-way and final approval of the lay-out by the State Division of Highways. The State proposes to utilize the City's right-of-way for construction of an elevated freeway lateral which will be one of the main distributors from the Bayshore Freeway. Construction of the first unit of the elevated structure may be started before any City street work is done due to the fact that the Public Works Department is not yet in a position to vacate the Public Works Yard at 11th and Bryant Streets which blocks the easterly entrance to the new improvement.

Bryant Street Ramp

Progress was made on plans for the Bryant Street Ramp which will extend from Second Street to Beale Street but completion was delayed by the necessity of co-ordinating the viaduct with a proposed bridge off-ramp now being designed by the Toll Crossings Division of the State Department of Public Works. By the end of the year a basis for detailed design had been established and steps were being taken to secure two needed pieces of right-of-way.

Grade Separation Structures

Three grade separation structures which have been in the planning stage for several years were nearly ready for the start of construction at the end of the year. The overpass structure at the intersection of Alemany and Junipero Serra Boulevards was re-designed in a few minor particulars at the request of the State Division of Highways and was ready for advertising. At the request of a representative of the Art Commission changes were made on plans previously prepared for the Stanley Drive Underpass at Junipero Serra Boulevard and for reconstruction of the Mission Street Viaduct over Alemany Boulevard. It became necessary to defer the Stanley Drive Structure for some time because of extensive changes in an on-and-off ramp layout requested by the State Division of Highways.

STREET IMPROVEMENTS FINANCED BY PROPERTY OWNERS

New street improvement work financed by property owners was at a slightly higher level than during the preceding year. Forty-nine contracts between property owners and contractors were authorized of which 14 contracts were for sewers only. Twenty-six City contracts were awarded under assessment proceedings. More work could have been undertaken during the year if additional city funds had been available for supplying the necessary City aid on a number of desirable projects which were requested by property owners. A complete list of the new street improvements performed

during the year is shown in Tables B-1 and B-2 of Appendix I.

The following tabulations indicate the volume of office activities carried on during the year in connection with street improvement procedures:

Assessments and Bonds

Assessments issued for cost of street work	17
Cost of st. improvements covered by assessments issued \$190,829.11	
Receipts for bond payments issued.	31
Amount of bond payment collected.	\$3,114.89

Street Work Proceedings

Resolutions of Intention passed	39
Street Improvement Projects recommended to the Board of Supervisors	34
Notices of Street Improvement posted	336
Notices of Resolution of Intention mailed	531
Ordinances ordering performance of street improvements passed	33
Proposals for street improvements published	31
Awards of Contracts for street improvements	26
Notices of Recordation posted	361
Notices of Recordation mailed	353
Private contracts granted	* 49

* Includes 14 contracts for sewers only-

STREET AND SIDEWALK PERMITS AND INSPECTIONS

The following tabulations indicate the variety of miscellaneous inspections made during the year and the numbers and types of various kinds of permits approved.

Utility Excavation Charges and Miscellaneous Permit Fees

	Number Permits	Fees
UTILITY EXCAVATIONS:		
Pacific Gas and Electric Co.	6502	\$ 9,753.00
Pacific Telephone & Telegraph Co.	766	1,149.00
S.F. Water Department	4222	6,333.00
Street Lighting, Trolley Electrification, Traffic Signals & etc.	290	435.00
Total	11,780	\$17,670.00
MISCELLANEOUS PERMITS:		
	Number	Fees
Curb Lowerings and Sidewalk Tanks	1,037	\$ 3,544.50
House Movings	52	2,660.00
Street Spaces	1,262	27,660.22
Total	2,351	\$33,864.72

SPECIAL PERMITS	Number	Fees
Blasting		
Flower Stands (10)	40	1,248.00
Sidewalks	43	
	90	\$1,248.00
TOTALS	14,221	\$52,782.72

Notices, Permits and Investigations

ITEM

1. Notices to construct or repair sidewalks	3,767
2. Notices to remove obstructions	226
3. Curb lowering permits and inspections	256
4. Notices to replace side sewer covers	481
5. Notices to obtain street space permits	10
6. Street space permits and inspections	3,061
7. Oil tank permits and inspections	107
8. House moving permits	52
9. Defects in pavements reported (written)	2,848
10. Damaged signs reported	169
11. Excavation permits approved	11,366
12. Excavation repaving inspected	2,904
13. Posting notices of improvements	682
14. State encroachment permits obtained	96
15. Asphalt samples for analysis	65
16. Claims investigations and inspections	153
17. Heavy equipment moving permit investigation	11
18. Correspondence answered	171
19. Personal and telephone calls of complaints or for information	10,494
20. Citations	16

TRAFFIC ENGINEERING

TRAFFIC SIGNALS INSTALLED

During the fiscal year 12 contracts for traffic signal installations were awarded at a total cost of \$224,434. Of this number, 8 were completed during the year, and 7 other contracts awarded during the preceding year were also completed. The complete list of all contracts active during the year is contained in Table C of Appendix I.

The Contracts completed included major installations on the main State Highway route through the city (Routes 2 and 68) from Van Ness Avenue and Bay Street on the north to Bayshore Boulevard and Army Street on the south, and also on 3rd Street running south from 4th Street to Islais Creek. Completion of these two installations brings the total of main arteries signalized with modern

3-light signals within the city to approximately 15 miles. The Van Ness Avenue portion of the State Highway system was supplemented by auxiliary signals on the major cross streets, one or two blocks each way, to insure free movement of traffic across the main highway. Twenty intersections on Larkin, Polk, Gough, and Franklin Streets were signalized for this purpose. Installations on the main State Highway route were made at 55 intersections.

Other contracts completed provided for signals at 14 isolated intersections. The year's completed work included installations at 98 intersections, at 61 of which old type Wiley signals were removed.

The contracts awarded but not completed during the year included installations on Bush Street and Pine Street extending from Market Street to Presidio Avenue, involving a total of 55 intersections.

TRAFFIC SIGNAL PLANNING

Plans were well advanced for the traffic signal system on Market Street and necessary standards and controllers were ordered from manufacturers. The first installation contract will extend from 10th Street westerly to Castro Street and this work should be under way before January 1950. Plans for that portion of Market Street between 10th Street and The Embarcadero are being held in abeyance pending a decision as to the adoption of additional one-way streets in the business district. The plans cannot be fully completed until this decision has been made.

Plans have been started for a number of other major traffic arteries, and also for about 14 isolated intersections, about half of which are intended for the protection of school children at important crossings as indicated below:

Traffic Intersections	School Intersections
Mission St. and Geneva Ave.	Larkin and California Sts.
Geneva Ave. and Naples St.	Foerester St. and Monterey Blvd.
Fulton and Stanyan Sts.	Bosworth (St. Mary's Ave.) and
Second and Townsend Sts.	Mission St.
Taylor and O'Farrel Sts.	Stockton and Washington Sts.
Ocean Ave. and Victoria St.	Mission and 15th Sts.
Ocean Ave. and Faxon Ave.	16th and Church Sts.

CHANNELIZATION

An important channelization project was completed in connection with a traffic signal installation at the intersection of Geary Boulevard and Masonic Avenue Extension. This location required special treatment because of the offset alignment of Masonic Avenue and the presence of ladder tracks on Geary Boulevard along the frontage of the Municipal Car Barn.



CHANNELIZATION
Geary Blvd. & Masonic Ave.



PARKING METERS
Neighborhood Business District

TRAFFIC STRIPING

During the fiscal year 123.2 miles of streets were striped for traffic and 1366 intersections were painted with cross-walks for pedestrians. The quantities of work performed by the Bureau of Building Repair under supervision of the Bureau of Engineering were as follows:

Traffic stripes painted	256.4 miles
Pedestrian cross-walks (12-in. stripes)	568,561 lin. ft.
Lettered signs on pavement	6,102
Bus stop stalls	522
Safety zones	258

This work was performed at a total cost of \$95,511.38.

TRAFFIC SIGNS

During the year a total of 3051 traffic signs of various types were installed at a total cost of \$14,648.75. Orders for the installation of signs were issued by the Police Department generally with the advice and recommendation of the Bureau of Engineering. Signs were furnished and installed by the California State Automobile Association under a continuing contract with the Department of Public Works, costs being paid from gas tax funds.

PARKING METERS

During the year 2356 parking meters were installed in 7 new zones located in various parts of the City bringing the total number of installations to 4352. The Bureau of Engineering made the surveys with members of the Police Department, prepared the contract drawings and supervised the installation of all stalls and meters. Surveys were made and plans prepared for an additional 2000 meters to be installed during the coming year.

STREET SIGNS

During the year the new type street name sign, which was described in the 1947-48 report, was installed at 1186 intersections. As of July 1, 1949, 2536 signs had been installed at a total cost of about \$136,000.

To complete the new street sign program three additional contracts are contemplated to cover the Sunset District, the southwest section of the City, and the south of Market-Mission District respectively.

TRAFFIC INVESTIGATIONS & STUDIES

Vehicular traffic counts were taken at 29 locations involving 198 hours of field work and an equal amount of office work. The counts were used in connection with timing of signals and verification of warrants for signal installations, "No Stopping" regulations, and installation of "Stop" signs.



STREET SIGN
New Type



WALK and WAIT SIGN
For Pedestrians

MISCELLANEOUS INVESTIGATIONS

Investigations of means for improving traffic conditions at numerous locations were made at the request of the Police Department, other City departments, improvement clubs and private citizens. They concerned "Stop" signs and directional signs, signals and beacons, safety zones and bus zones, freight and passenger loading zones, traffic striping and cross-walks, "One Way" and "No stopping" streets, parking restrictions and other problems pertaining to traffic engineering. A total of 398 investigations and recommendations were made.

DAMAGE CLAIMS

The Bureau investigated 148 damage claims which had been filed against the Department of Public Works based on street and sidewalk accidents. One hundred of them were found to be the responsibility of contractors or privately or publicly owned utilities. The remainder included 23 claims alleging defective pavements and 25 alleging defective sidewalks, which would be the responsibility of the Department of Public Works if negligence in making repairs could be shown. In each of these cases a full report was made, accompanied by photographs when appropriate.

The annual tabulation of all claims involving the Department of Public Works was closed on October 5, 1948, showing all claims and suits filed or active for the five year period ending June 30, 1948. This tabulation, prepared for the Director and City Attorney, included personal injury and property damage claims, of the type mentioned above, and also damage claims resulting from accidents in which Department of Public Works vehicles and equipment were involved, as well as accidents at cave-ins caused by broken sewers. The following significant figures are taken from the summary:

Claims filed 5-year period		404
Claims and suits settled	120	
Claims outlawed (no suits filed)	84	204
Suits pending, June 30, 1948	62	
Claims pending, June 30, 1948	138	200
Suits filed prior to 5-year period		
and still pending June 30, 1948		34
TOTAL suits and claims pending		234

The 120 claims and suits which were settled asked for damages aggregating \$423,490. The amount paid by the City was \$32,359.

SEWERS

Construction of trunk sewers became an important phase of the year's construction program following a period of relative inactivity during the preceding year. Two major units of each of

two large storm sewer systems, financed by the 1944 Bond Issue, were undertaken. In addition a number of smaller projects were completed, including 4 contracts awarded during the preceding year. A listing of all contracts will be found in Tables D-1 and D-2 of Appendix I. The year's work also included the awarding of contracts for two new sewage pumping stations, listed in Table E of the same appendix and described later under the heading "Sewage Pumping Stations."

LAKE MERCED SYSTEM

Contracts were awarded for the two downstream units of this system, this being the first work done since 1946 when the uppermost section was constructed. The sewer is primarily a storm drainage interceptor taking care of the southwesterly portion of the city extending as far north as Sloat and St. Francis Boulevards and as far east as Mt. Davidson. The total drainage area is 1720 acres and the design capacity of the system at the ocean outfall is 1100 cubic feet per second. The main sewer skirts Lake Merced on the easterly side, crosses the southerly arm of the lake partly above water level, and then passes in tunnel through the ridge separating the lake from the ocean. A second tunnel is required where the conduit passes under the Park Merced Housing development. The system was described in some detail in the Annual Report for the year ending June 30, 1945.

The sewer tunnel to the ocean runs under Fort Funston and is referred to as Section "D" of the Lake Merced System. It will be 2756 feet long and will be lined with concrete. The finished section will be of horse-shoe shape 10'-0" wide and 11'-3" high. Construction was covered by a contract awarded on August 6, 1948, and about two-thirds of the work was completed by the end of the year. The tunnel was driven initially from the east end. A second heading from the ocean portal was started in April 1949. At the end of the fiscal year 630 feet had been driven from the west portal and 1725 feet from the east portal. For almost the full length, the bore was in saturated sand. Well-points were used continuously at the east heading and a sub-drain at the west heading to lower the ground water level during construction. For a part of the distance in the east heading, chemicals were injected ahead of the face to consolidate the flowing sand. The contractor used 10" by 10" timber sets at 4'-3" centers, each consisting of a 5-segment arch with wall plates and vertical posts. Continuous tight horizontal lagging was used throughout. A wall plate drift was kept 10 to 15 feet ahead of the main face on each side of the tunnel bore.

The next section (Section "C") of the Lake Merced Sewer System, upstream from the tunnel, is a reinforced concrete sewer along the westerly shore of the lake and extending on a concrete pile trestle across the southerly arm of the lake to the east



In East heading - showing two pilot drifts & main bench.



Excavation completed & timbering placed.
LAKE MERCED SEWER - "Section D" - in Tunnel
10'-0" x 11'-3" Reinforced Concrete Sewer



Making 100 ft. Fill - Across Lake for Sewer to be on piles.



Sewer during Construction
(Well point line at left)

LAKE MERCED SEWER "SEC.-C"

6'-9" X 6'-9" - Compartment Reinforced Concrete Sewer

shore. The sewer will consist of three compartments each 6'-9" square and will have a total length of about 2900 feet. The contract for this structure was awarded on March 9, 1949, and about 20% of the work was completed by June 30. The contractor constructed a temporary fill across the lake to provide a working base after lowering the water level about 3.5 feet. Concrete piles 16 inches square and 30 to 86 feet long were cast on the site at the west end of the lake crossing. Driving of piles was started at the east shore.

LAKE STREET SEWER SYSTEM

The Lake Street Sewer System consists of a storm overflow from 17th Avenue and Lake Street through the Presidio to an ocean outfall near the mouth of Lobos Creek and a new main interceptor extending from 17th Avenue and Lake Street via Lake Street, Eighth Avenue, California Street and Cornwall Street to Arguello Blvd. and thence southerly on Arguello Blvd. to Fulton Street. The flow in existing sewers on California Street, Euclid Avenue, Geary Blvd., Anza Street and Turk Street east of Arguello Blvd. will be intercepted, relieving flooding conditions which have occurred in these sewers in Geary Blvd. west of Arguello Blvd., and on Lake Street in the vicinity of 17th Avenue. The system drains 850 acres in the city extending as far east as Masonic Avenue and as far south as Fulton Street. It takes care of the new Laurel Heights and Anzavista subdivisions and provides drainage for certain areas in the Presidio. The design capacity is 820 cu. ft. per second at 17th Avenue and Lake Street.

A contract was awarded and completed this year for construction of Section "A", the overflow storm sewer through the Presidio to Lobos Creek. The work included an overflow structure at Lake Street, 2900 feet of 7'-0" dia. and 6'-6" dia. centrifugally spun reinforced concrete pipe, and an outlet structure. The outlet structure was not entirely completed because of the opposition of an adjoining property owner to the proposed open-channel type of construction below the outfall.

A contract for the second unit, Section "B", extending on Lake Street from 17th Avenue to 8th Avenue was awarded this year and is now under construction. Alternate bids were taken for monolithic concrete sewer and centrifugally spun reinforced concrete pipe, the job being awarded on the basis of the latter. This unit consists of approximately 2600 feet of 7'-6", 7'-0", and 6'-0" diameter reinforced concrete pipe and 150 feet of 7'-6" diameter and 2'-6" x 3'-9" egg-shaped monolithic concrete sewer.

NORTH POINT MAIN SEWER TIMBER OUTLET

The North Point Main, an 8'-6" diameter concrete main sewer has been discharging sewage and storm water for the past 40 years at the Embarcadero at Pier 37 through a constricted timber box

outlet 3' wide by 5' high. This constricted outlet occasionally became obstructed by floating debris and an examination in the fall of 1948 disclosed that the interior sheathing was badly broken and displaced. To ensure a free outfall for this important sewer, a new and enlarged timber box outlet was constructed this year at a contract cost of about \$22,000. The new outlet consists of 82 feet of 8'-6" x 8'-6" octagonal conduit, planked inside and outside and running from the existing 8'-6" diameter concrete sewer to an enlarged opening through the main sea-wall at the edge of the Embarcadero.

The outlet was constructed of timber due to the fact that it will serve as a main sewer outlet only until completion of the North Point Sewage Treatment Plant, now under construction, after which it will be merely a relief or by-pass outlet. The reconstruction was performed under considerable difficulty due to tidal conditions and the heavy flow of sewage in the sewer. Portions of the work could only be done at low tide.

JACKSON ST. SEWER: SANSOME TO MONTGOMERY

During the removal of old street car tracks in this block, the existing 4' x 6' egg-shaped brick sewer showed signs of imminent collapse under the weight of construction equipment and an emergency contract was awarded at a cost of about \$34,550 for replacing 500 feet of the old brick sewer with a 4' x 6' reinforced concrete sewer. The old brick sewer, which has been in service since about 1863 and through major earthquakes, had required considerable maintenance and repair work.

INGLESIDE SEWER RELOCATION IN STONESTOWN

The existing Ingleside sanitary sewer was relocated through the new Stonestown subdivision by the subdivider and enlarged from 24" diameter to 33" diameter. In that the City desired the enlargement for future needs, the City agreed to pay the enlargement cost. The City's portion of cost was represented by a contract which was awarded for \$7,400 for the construction of 550 feet of 33" centrifugally spun pipe in Winston Drive, a proposed street in the Stonestown subdivision.

OTHER SEWERS

A number of sewer construction and reconstruction projects were undertaken in connection with street and highway contracts. Notable among these was the relocation of the existing sewer outfall at the south end of the Islais Creek bridge. This required the construction of 135 feet of 4'-6" diameter concrete sewer on creosoted concrete piles designed to carry 102 cu. ft. per second. New sewers were also required in the widening of Anza and Army Streets, in the Gough Street Extension, and in connection with the restoration of Erie, Trainor and Columbia Square Streets in the

subsiding area.

GANTNER-MATTERN DAMAGE SUIT

The Bureau of Engineering furnished a large part of the technical information used by the city in successfully defending a suit for damages brought by the Gantner-Mattern Co. located on the south side of Mission Street between 10th and 11th Streets. It was alleged that a storm on February 6, 1942 and also on previous occasions had overloaded the main sewer in the street and caused a back-flow into the building sewer and onto the first floor and that the resulting deposits had plugged the building sewer and caused damage to the extent of \$11,000. The city proved to the satisfaction of the jury that the main sewer was adequate and that flooding had been caused by defective house plumbing. A favorable verdict was rendered on February 18, 1949.

INVESTIGATIONS AND STUDIES

Office studies included further preliminary plans for the diverting of all sanitary sewage in the northeast sewage district to the treatment plant now under construction. A special study was made of the existing Commercial Street pumping station to determine whether it could be satisfactorily enlarged or whether a new station at a new location would be more economical. The latest studies indicated that a new station on Jackson Street would be the best solution if a site can be purchased at a reasonable figure.

Standard plans for concrete manholes for use with 27" and 48" diameter concrete pipe were prepared, as well as a standard design for a V.C.P. stub in centrifugally spun concrete pipe. The standard plan for catch basins was revised to provide a horizontal bar in the curb opening where the height exceeds 5½ inches, the purpose being to prevent children or animals from slipping into the opening.

The Sewer Section of the Division of Design handled numerous routine matters during the year including the following:

Review of sewer plans for new subdivisions	9
Investigation of sewer complaints	7
Proposed street closings	18
Investigation of sewer easements	6
Miscellaneous investigations	22

SEWAGE DISPOSAL

NORTH POINT SEWAGE TREATMENT PLANT

Passage of the \$15,000,000 Sewage Treatment Bond Issue in June 1948, made it possible to finance the North Point Sewage Treatment Plant, bids for which had been rejected on February 25, 1948. The plans were revised by omitting the influent and effluent sewers and bids were again received on November 17, 1948. The contract was awarded on November 24 to M & K Corporation, Fred J. Early Jr. Co. Inc., Stolte, Inc. and Haas & Rothschild, Joint Venturers, whose bid was \$8,289,525. The only other bidder was Peter Kiewit Sons & Co. whose bid was \$8,431,096.

Contract work began on January 17, 1949 and is to be completed in a period of two years. To date approximately 10% of the work has been completed consisting of clearing site; casting in place 23,000 lineal feet of concrete piles, driving 3,000 feet of timber piles; construction of Emergency Repair Building; partial construction of Pre-treatment Building from foundation to operation floor; partial construction of Receiving Structure from foundation to ground floor; partial excavation for the Administration building; and partial excavation for the Pre-aeration and Sedimentation Building.

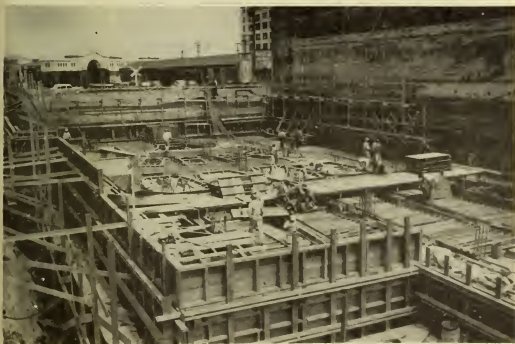
Excavation in the area around the Gate House and the south portion of the Administration Building has disclosed that solid rock is at greater depths than anticipated, which may require changes in design of the foundations of these buildings. The nature of the overlying material has made it necessary for the contractor to devise special procedures for supporting his excavation in order to avoid damage to properties immediately adjacent to the south property line. No other difficulties have been encountered in prosecuting the work.

OTHER UNITS OF NORTH POINT SYSTEM

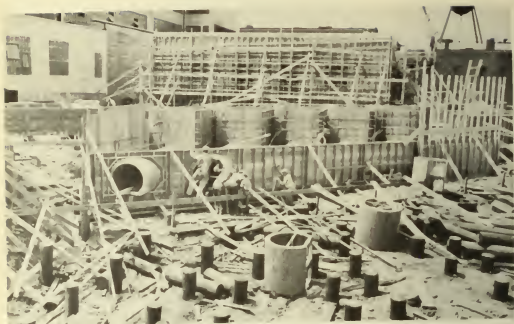
At the end of the fiscal year plans were nearly completed for the cross town sludge force main between the treatment plant in the vicinity of Bay Street and Grant Avenue and the sludge plant to be located near Islais Creek. Plans were also nearly ready for the influent and effluent sewers at the North Point Plant incorporating changes desired by the State Harbor Commission with reference to the outfalls under Piers 33 and 35. The plans and specifications for the North Point Sludge Plant, after passage of the sewage treatment bonds, were returned to Clyde C. Kennedy, Consulting Engineer for this plant, for revision and modification in view of the anticipated early construction of the Southeast Sewage Treatment Plant and were nearly ready for readvertising by the end of the year. All of these units are expected to be under construction in the fall of 1949.



Excavating for Administration Bldg. & Sewage Lift Station
(Pretreatment & Grit Removal Bldg. in background)



Pretreatment & Grit Removal Bldg. above operating floor.
NORTH POINT SEWAGE TREATMENT PLANT



Receiving Structure showing form
work for hinged gates and 5-48" inlet pipes.



Preaeration and Sedimentation Bldg. #1
showing precast piles driven and forms for girders.
NORTH POINT SEWAGE TREATMENT PLANT

SOUTHEAST SEWAGE TREATMENT PLANT

Plans for the Southeast Sewage Treatment Plant are being prepared by Clyde C. Kennedy under an engineering contract with the Department of Public Works. It is expected that the plant will be under construction early in 1950.

SOUTHEAST SEWERAGE DISTRICT

Preliminary studies have been completed for the collecting system in the Southeast Sewerage District which will contribute sewage to the Southeast Sewage Treatment Plant. The sewage is to be collected and diverted at various existing outfalls and, according to preliminary plans, will be transported to the proposed Southeast Treatment Plant through four major systems, briefly described as follows:

(1) Mariposa-3rd St. System - All sewage north of Islais Creek, bounded on the north by 16th St., on the west by Missouri St. and on the east by the bay, is to be collected at the Mariposa and 3rd St. outfalls, thence to be transported partially by pumping and partially by gravity to the diversion structure at Selby and Napoleon Sts., which is to be connected to the Southeast Plant.

(2) Selby-Marin System - All sewage west of 3rd St., bounded on the west by Balboa Park and the eastern slopes of Mt. Davidson, on the north by Army St. and on the south by Silliman St., is to be collected at the Selby-Aleman and Marin St. outfalls, thence to be transported to the Southeast Plant.

(3) Yosemite-Palou-Evans System - All sewage south of Islais Creek, bounded on the south by the northern slopes of Bay View Park, on the west by 3rd St., (but including a small area west of 3rd St. just east of the city water reservoir) and on the east by the bay, is to be collected at the Yosemite, Palou, Evans and 3rd St. outfalls, thence to be transported partially by pumping and partially by gravity to the Southeast Plant.

(4) Sunnydale-Candlestick System - All sewage north of the county line, bounded on the north by Mansell St. and the southern slopes of Bay View Park, on the west by Brookdale Ave., and on the east by the bay, is to be collected at Sunnydale and Candlestick outfalls, thence to be transported by pumping to the Southeast Plant.

LOG CABIN RANCH

Log Cabin Ranch, a boys' juvenile correctional institution near La Honda, is now faced with a serious sewage disposal problem. Because of unsuitable soil conditions, cesspools and ground percolation have been found unsatisfactory. As Log Cabin Ranch is situated on top of a hill, there have been complaints to the effect that raw sewage has been overflowing onto private property

and into the Alpine Creek which is used as a source of drinking water.

In accordance with a request by the Juvenile Probation Department and State and County health authorities, the Bureau of Engineering proposed hillside spraying followed by evaporation ponds as a temporary expedient. A preliminary layout was also made for a permanent primary and secondary sewage treatment plant, which would include a complete collection system; primary treatment consisting of an Imhoff tank, a trickling filter, and a primary clarifier; and secondary treatment consisting of an intermittent sand filter, secondary clarifier and final chlorination. The completely pure effluent would either be stored for fire protection or impounded in large evaporation ponds. It was estimated that the installation would cost about \$50,000.



Laying 6'-6" Centrifugal Spun Precast Reinforced
Concrete Pipe - 8'-0" length - weight 8 tons
LAKE STREET SEWER - "SECTION A"

INDUSTRIAL WASTE SURVEY

In March 1948, a survey of industries in the City was undertaken to determine (1) the number of industries discharging industrial waste, (2) the volume, character, and point of discharge of the wastes and (3) the effects of the wastes on:

- (a) Life and maintenance of sewerage system.
- (b) Health and safety of public and of workers in sewerage systems and treatment plants.
- (c) Treatment plant operation.
- (d) Treatment plant effluents and receiving waters.

Current practices in making such surveys in the City of Los Angeles, the County of Los Angeles, and various other places were first investigated and then used as a preliminary guide. The work was done under the supervision of the superintendent and assistant superintendent of the Richmond-Sunset Sewage Treatment Plant and with the advice and cooperation of the staff of the Bureau of Sewer Repair. A preliminary report on the survey was included in the 1947-1948 Annual Report.

INFORMATION OBTAINED

All plants considered to have industrial wastes were visited personally; a responsible official was interviewed, the process checked, and the waste observed. For those plants having industrial wastes the following data were collected and entered on the survey sheets: (1) the type of industry and the processes used; (2) the volume and composition of plant wastes; (3) present facilities within the plant for treating plant wastes prior to release (4) the point at which plant wastes are now discharged, i.e., into City sewers or at the margin of the bay.

The volume of industrial wastes was not measured directly but was calculated from the water consumption with due allowance for sanitary flow, water used in the process, losses to the atmosphere, etc. With a few exceptions it was found to be impracticable to obtain representative samples for analysis. The characteristics of the wastes were estimated from knowledge of the process, visual observation and literature references.

The effects of the wastes on treatment plant operation and treatment plant effluents were determined as compared to normal sewage. In those cases where present treatment facilities are not considered adequate, additional facilities are tentatively recommended pending establishment of definite standards.

Except in a few representative cases, the following types of industries and commercial establishments were omitted from the survey because their individual industrial wastes contributions are quite small, although some may require further treatment facilities: service stations, car washing stations, restaurants,

office buildings, hospitals, small laundries and automatic laundries, small printers, lithographers, and photographers, small poultry and fish stores, and markets.

A total of 765 industries were visited during the course of survey of which 403 had industrial wastes. The Southeast Sewerage District was surveyed first because most heavy industries are located there. All industrial establishments were visited in this area with the exception of the types listed in the preceding paragraph. In the North Point District survey, however, the kind of industries found in the Southeast District survey to have no industrial wastes were omitted. Among these latter are lumber yards, woodworking shops, sheet metal fabricating shops, foundries, warehouses, florists, clothing manufacturing shops, etc. The survey did not include the Richmond-Sunset District as there are very few industries in that district.

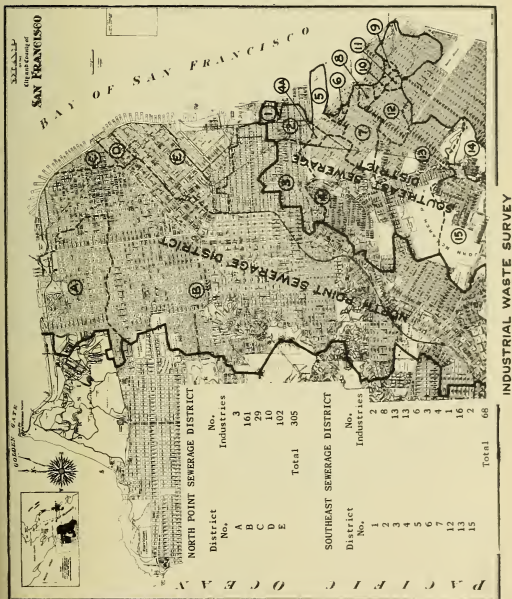
During the same period an examination of the bay shore in the southerly portion of the City was made to ascertain the effect of waste discharges. It was found that sludge banks and deposits have formed along the shore-line in the vicinity of all the sewer outfalls and in the areas adjacent to the points of present discharge of industry wastes.

SOUTHEAST SEWERAGE DISTRICT

The Southeast Sewerage District, comprising the Southeast portion of the city, was divided for the purpose of the survey into fifteen sub-districts tributary to the outfalls discharging directly to the bay as shown on the accompanying map. The Navy Yard at Hunters Point was not included in the survey. Each sub-district was surveyed completely before proceeding to the next. The field survey of the entire area was completed on June 4, 1948.

A total of 177 industries were surveyed in the district of which 94 had industrial wastes. Of the 94 industries with industrial wastes, 68 discharge approximately 2,200,000 gpd to city sewers, 19 approximately 2,100,000 gpd directly to the bay, and 7 approximately 10,000 gpd to the ground, a total in the aggregate of approximately 4,310,000 gpd. The wastes from 12 of these industries amounting to approximately 100,000 gpd require no treatment. Present treatment facilities are adequate in 21 industries contributing approximately 1,040,000 gpd, but additional facilities are required in 61 industries contributing approximately 3,170,000 gpd. All these industries operate practically continuously throughout the year with the exception of six fish canneries which operate seasonally. The industrial wastes from the six fish canneries amount to approximately 500,000 gpd to city sewers and 1,200.00 gpd directly to the bay.

These data are summarized in Table 1 below and Table A of Appendix VI. Table 1 shows the numbers of industries and volumes of wastes per day to sewers, bay or ground. Table A shows



for each type of industry the number of plants and the volumes of wastes per day for which no treatment of the wastes is required, present treatment facilities are adequate, and additional facilities are required respectively.

NORTH POINT SEWERAGE DISTRICT

The North Point Sewerage District, comprising the easterly portion of the city, but excluding the Southeast Sewerage District was divided for the purpose of the survey into five sub-districts tributary to the various outfalls as shown on the map. The Army Reservation at Fort Mason was not included in the survey. Each sub-district was surveyed completely before proceeding to the next. The field survey of the entire area was completed on October 15, 1948.

A total of 588 industries were surveyed of which 309 had industrial wastes. Of the 309 industries with industrial wastes, 305 discharge approximately 6,750,000 gpd to city sewers and 4 approximately 80,000 gpd directly to the bay, a total of approximately 6,830,000 gpd. The wastes from 70 of these industries amounting to approximately 1,070,000 gpd require no treatment. Present treatment facilities are adequate in 54 industries contributing approximately 470,000 gpd, but additional facilities are required in 185 industries contributing approximately 5,290,000 gpd. All these industries operate practically continuously throughout the year.

The data are summarized in Tables 2 and Table B of Appendix VI. Table 2 shows by sub-districts the numbers of industries and volumes of waste per day to sewers or bay. Table B shows for each type of industry the number of plants and the volumes of wastes per day for which no treatment of the wastes is required, present treatment facilities are adequate, and additional facilities are required respectively.

TABLE 1
INDUSTRIAL WASTE SURVEY
SUMMARY OF VOLUMES OF INDUSTRIAL WASTES
SOUTHEAST SEWERAGE DISTRICT

District No.	No. of Industries	To City Sewers, gpd	No. of Industries	To Bay, gpd	No. of Industries	To Ground gpd
1	2	129,000	2	630,000		
2	8	514,600*	1	5,000	1	5,000
3	13	305,800				
4	13	93,100			2	2,000
5	6	309,500	9	1,124,900**	4	3,100
6	3	23,500	2	42,000		
7	4	4,700	2	53,000		
12	1	4,000	3	240,000		
13	16	717,300				
15	2	100,500				
Total	68	2,202,000	19	2,094,900	7	10,100

Total volume industrial waste 4,307,000 gpd.

*Includes 500,000 gpd from 1 fish cannery which operates seasonally.

** Includes 1,020,000 gpd from 5 fish canneries which operates seasonally.

TABLE 2
INDUSTRIAL WASTE SURVEY
SUMMARY OF VOLUMES OF INDUSTRIAL WASTES
NORTH POINT SEWERAGE DISTRICT

District No.	No. of Industries	To City Sewers, Gallons per Day	No. of Industries	To Bay, Gallons per Day
A	3	158,500		
B	161	3,700,200	2	74,500
C	29	226,800		
D	10	52,000		
E	102	2,608,000	2	8,500
Total	305	6,745,500	4	83,000

Total volume industrial waste 6,828,500 gpd.

SURVEYS AND MAPPING

GENERAL SURVEYS

On July 20, 1948, a sixth survey party was added to the personnel of the Surveys and Mapping Section and all six were continuously employed throughout the fiscal year. The routine work embraced preliminary topographic profiles and cross sections required for design purposes; the control lines and grades preceding construction work; final examinations on public and private contracts; the establishment and checking of monument lines; the running of level circuits; and the setting of bench marks.

In addition to the routine work, surveys covering 56,300 lineal feet of line were run for track removal and pavement resurfacing contracts. There also were 31 surveys of School Department and Playground Department properties which included approximately 50,000 feet of line as well as the topography necessary to plot five foot contours. Total surveys for the year covered about 761,710 lineal feet or 144.2 miles in 1214 City blocks distributed as follows:

Type of Survey	Length in Feet
Lots	48,730
Sewers	68,880
Cross sections	205,450
Subsidence	1,500
Monument lines	24,100
Topography	205,450
New Streets	42,550
Line and Grade for Curb and Paving	147,250
Miscellaneous	17,800
Total	761,710

Included in the above tabulation are 24,100 feet of monument lines. Ninety-one monuments were either set, checked, recapped, or referenced.

PRECISE LEVELS

Due to the pressure for other types of surveys, the Precise Level Party spent a relatively small amount of time (compared with last year) in running precise level traverses and in setting bench marks. The districts, number of benches set, and distances in miles are tabulated below:

District	Bench Marks	Distance-Miles
Western Addition	306	4.5
Hundred Vara	10	3.6
South San Francisco	246	2.3
Flint Tract	84	1.6
Total	646	12.0

NUMBER OF SURVEYS MADE AND FEES RECEIVED

Listed below are the number of surveys made during the year for Public and Private Contracts and for Municipal Departments, and a monthly tabulation of fees received.

Public Improvement Surveys

For Public Contracts	35
For Private Contracts	29
Resurveys for Public and Private Contracts	51
For Municipal Departments	239
Total Surveys for Public Improvements	354

Lot Surveys

For Private Owners	0
For Municipal Departments	18
For S. F. Unified School District	15
Total Lot Surveys	33

Survey Fees Received - Fiscal Year 1948-1949

July	\$ 1,110
August	90
September	160
October	1,630
November	1,430
December	1,695
January	610
February	2,145
March	1,950
April	1,490
May	280
June	1,220
Total	\$13,810

OFFICE WORK

During the year 11 appeals from decisions of the Planning Commission referred to the City Engineer were checked in compliance with Section 117 of the Charter, which requires that such protests be signed by the owners of twenty percent of the property affected.

Fifty-two actions to quiet title to land (McEnerney Actions) together with three Eminent Domain Actions forwarded by the City Attorney were checked to determine the City's interest in the property involved and the correctness of the property descriptions.

SUBSIDENCE RECORD

Acting upon a suggestion of the San Francisco Section of the American Society of Civil Engineers, a compilation of bench mark elevations in subsiding areas in the business section of the City was made during the year. The record included the elevations of 788 bench marks located at 157 different street intersections in the 50 and 100 vara districts of the City. Elevations were obtained from surveys made between 1909 and 1946.

The bench mark elevations were assembled on separate sheets for each street intersection and the average rate of subsidence for each bench mark was computed. The same material was then worked up in graphical form by means of a chart showing bench mark locations in plan and elevations plotted with reference to a scale of years. These charts indicate clearly the general rate of subsidence of bench marks and the degree of conformity in behavior between the various bench marks at a given street intersection. The results of this study are made available to engineers and builders on request, and it is hoped they will prove to be of value in the designing of foundations for major structures in the down town area.

A typical chart is reproduced herewith for illustration of the form used in presentation. This particular chart, applying to the intersection of Howard and 7th Streets, is in one of the more rapidly subsiding areas and seems to indicate practically continuous and uniform settlement.



SUBSIDENCE IN A NARROW STREET
Main Street has been brought to grade.

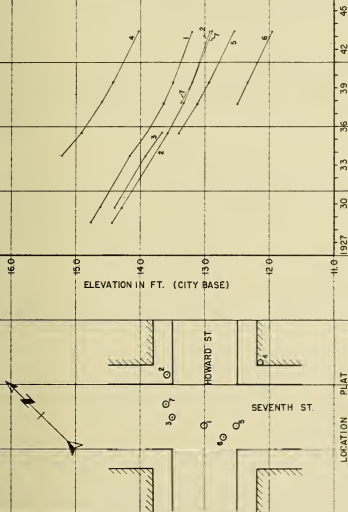
ELEVATION IN FT. (CITY BASE)

LOCATION PLAT

DATE OF SURVEY

HOWARD ST. & SEVENTH ST.

SUBSIDENCE CHART



STREET DEDICATIONS AND CHANGES

Numerous actions taken by the City during the year with reference to subdivisions, street grades, sidewalk widths, and street closings were based on investigations and recommendations of the Bureau of Engineering and in many cases involved preparation of specific descriptions by the Surveys and Mapping Section of the Bureau.

TENTATIVE SUBDIVISION MAPS

Three tentative maps covering new subdivisions and resubdivisions were received from subdividers, together with two revised maps of subdivisions previously submitted. All maps were checked for boundary and subdivision lines, and design of streets and sewers.

Tentative Maps Received

Lakeshore Park Subdivision #3-A portion of Lake Merced Lands
Crocker Amazon Tract Subdivision #2 - A resubdivision of
Assessor's Blocks 6418-19 and 6320-96
Stonestown - A portion of Lake Merced Lands
Crocker Amazon Highlands (Revised)
Postal Heights (Revised)

SUBDIVISION MAPS FILED

Eight final maps were approved by the City Engineer and Director of Public Works and filed in the Recorder's Office during the year, as listed below:

Maps Approved and Filed

Widening of S. W. corner Francisco and Larkin Streets
Portion of Assessor's Block #6582 (Kronquist Court)
Apparel Heights
Princeton Terrace
32 Parcels of Land - proposed to be closed in Parkmerced
Portions of Moscow, Munich, Avalon and LaGrande Avenue to
be closed
23 hatched parcels within Parkmerced to be conveyed to City
and County of San Francisco
Realignment of Montana Street and the widening of Summit
Street

GRADES ESTABLISHED

The official grade for Mullen Avenue between Peralta Avenue and Franconia Street was established during the year.

GRADES CHANGED

Official street grades were changed on three different streets in the following locations:

Wayland Street - Amherst Street to Oxford Street
Cambridge Street - Wayland Street to 200 feet westerly
Yale Street - 150 feet Sly. of Wayland Street to
200 feet Nly. of Wayland Street

SIDEWALK WIDTHS CHANGED OR ESTABLISHED

Official sidewalk widths were changed by action of the Board of Supervisors on the following streets based on recommendations of the Bureau of Engineering.

Niantic Ave. - Panama Street to St. Charles Avenue

Walk width established on northwesterly side conforming with curve of property line.

Rhode Island Street - Division Street to Alameda Street

Width on easterly side reduced from 15 feet to 12 feet.

Alameda Street - Potrero Avenue to Bryant Street

Width on northerly side reduced from 15 feet to 10 feet.

Halleck Street - Sansome Street to Leidesdorff Street

Sidewalk 5'-5" wide on southerly side abolished.

Albion Street - 15th Street to 16th Street

Width on both sides reduced from 10 feet to 7 feet.

CLOSING AND ABANDONING STREETS

During the year 39 requests were received from various sources calling for the vacating and abandonment of portions of certain City streets. One of these requests was later withdrawn, one was denied, and 25 are still under consideration. The twelve acted upon favorably were as follows:

Clarkson Street - 31st Street and Fowler Street

Toland Street - Shafter Street to Industrial Street

Geneva Avenue - Gloria Court to Mission Street

Star Street - Cabot Street and Portion of Peralta Avenue

Ashburton Street - Grant Avenue easterly

26th Street and Army Street - Douglass Street to Hoffman Avenue

Mississippi Street - 23rd Street to 466' Sly.

Stevenson Street - Adjacent to S'ly termination

LaGrande Vue Subdivision - Streets within

Martin Street - Moffit Street to Poppy Lane

Eighth Street - DeHaro Street to Alameda Street

Parkmerced - Streets within

LABORATORY AND TESTING WORK

The testing laboratory was operated as a part of the Division of Construction to control materials used on construction projects and, particularly, to verify asphalt and concrete mixes used on street work and in various structures. In addition many routine tests were made for the Purchaser of Supplies and for various other City departments.

CONCRETE

Concrete furnished by ready-mix plants on various types of contract work gave satisfactory results throughout the year. All samples taken from active work tested well above specifications. The use of calcium chloride, to accelerate setting on pavement work and certain other contracts, continued to give very satisfactory results.

ASPHALT PAVEMENTS

During the unusual cold spell last winter some difficulties were experienced with asphalt pavement. Samples subsequently cut from the surfacd showed specific gravity below normal requirements indicating that there had been a lack of compaction due to low temperatures at the time of placing. It was also found that some of the asphalt pavement placed by the Bureau of Street Repair was giving unsatisfactory results due to the excessive amount of fine material contained in the Antioch sand used in the mix. This was corrected by raising the asphalt content slightly and by requiring a more uniform and satisfactory type of sand.

Some raveling at the edges of asphalt wearing surface applications was noted where attempts were made to produce too thin a feather edge between new and old pavement. It was recommended that the edge be left raised from 1/4" to 3/8" with a 3" to 6" strip of tack coat exposed along the edge. This raised edge does not interfere with traffic and during warm weather will be worked down leaving practically an invisible joint without raveling.

SUMMARY OF TESTS PERFORMED

A summary of the tests made in the laboratory during the year, together with corresponding figures for the preceding year, are shown in the following table:

Laboratory Tests

	1947-48		1948-49	
Chemical & Physical Tests				
Public Utilities Commission	83		60	
Department of Public Works	103		198	
Purchaser of Supplies	97		49	
San Francisco Fire Department	149		80	
Park & Recreation Departments	8		3	
Bureau of Architecture	14		24	
Bureau of Engineering	135	589	65	479
Paint Tests				
Park and Recreation Departments	6		--	
Purchaser of Supplies	28		20	
Bureau of Architecture	8		2	
Public Utilities Commission	4		3	
Bureau of Engineering	37	83	13	38
Coal Tar Tests				
Public Utilities Commission	28	28	4	4
Asphalt Tests				
Corporation Trenches	49		85	
Public Utilities Commission	13		2	
Park and Recreation Departments	6		2	
Department of Public Works	96		143	
Bureau of Engineering	114	278	200	432
Concrete Tests				
Bureau of Building Inspection	--		4	
Park and Recreation Departments	--		23	
Bureau of Architecture	22		63	
Public Utilities Commission	79		442	
Bureau of Engineering	569	670	869	1401
Totals		1648		2354

SERVICES PERFORMED FOR OTHER BUREAUS AND DEPARTMENTS

The Bureau continued the practice of complying with requests for the furnishing of technical services to other bureaus within the department and other departments of the City whenever it was possible to do so. The following is a summary of the principal services performed.

FOR BUREAU OF STREET REPAIR

Supervised installation of a dust collection system at the Municipal Asphalt Plant to control and remove the dust from the front of the dryers, vertical flight conveyers, and measuring room. The dust from the collection system is trapped and removed in a Rees Blow Pipe Mfg. Co. cloth tube Dust Arrestor before the filtered air is discharged.

FOR BUREAU OF ARCHITECTURE

Prepared structural plans for alterations to the DeYoung Museum.

Prepared structural plans for alterations to the Generator Room Platform at the San Francisco Hospital.

Prepared plans and specifications for retaining wall at the yard of the Grant School.

FOR THE PARK COMMISSION

Made recommendations as to the operation and maintenance of the activated sludge plant in Golden Gate Park.

FOR DEPARTMENT OF ELECTRICITY

Inspected the construction of a retaining wall under the storage building at 264 Golden Gate Ave., the plans, specifications and estimates for which had been prepared by this bureau.

Prepared specifications and inspected the painting of the radio towers at the Fire Alarm Station.

FOR CALIFORNIA LEGION OF HONOR COMMISSION

Inspected the construction of a 75,000 gallon reinforced concrete cistern for fire protection, the plans, specifications and estimates for which had been prepared by this bureau.

FOR DEPARTMENT OF PUBLIC HEALTH

Preparing plans, specifications and estimates for a new water tank at the Laguna Honda Home.

Made periodic visits to the Hassler Home in San Mateo County to advise on operation and maintenance of the sewage treatment plant.

Checked effluent of Emerald Heights Sewage Treatment Plant as to results of chlorination which had been arranged for with San Mateo County Engineer.

FOR SHERIFFS OFFICE

Made inspections and tests at regular intervals for control of operation of the activated sludge treatment plant at County Jail #2 in San Mateo County and arranged for installation of special aerator in No. 1 Aerator Tank.

FOR BOARD OF EDUCATION

Made 15 surveys of property to be used for new school buildings which involved approximately 36,500 feet of line as well as the topography necessary to prepare maps showing five-foot contours.

FOR RECREATION COMMISSION

Made 12 surveys of property to be used for playground purposes which involved approximately 19,000 feet of line as well as the topography necessary to prepare maps showing five-foot contours.

FOR JUVENILE COURT DEPARTMENT - LOG CABIN RANCH

Investigating the water and sewage system.
Preparing preliminary plans for sewage treatment plant.
Investigating the electrical installations.

FOR PUBLIC LIBRARY COMMISSION

Made 3 surveys of property to be used for branch library sites which involved approximately 200 feet of line as well as the topography necessary to prepare maps showing five-foot contours.

FOR REAL ESTATE DEPARTMENT

Made 3 surveys of property in connection with acquiring of property involving 2500 feet of line.

FOR PUBLIC UTILITIES COMMISSION - Bureau of Light and Power

Prepared Plans and Specifications for Kezar Stadium lighting towers for night games.

FOR CHIEF ADMINISTRATIVE OFFICER

Prepared tentative designs for shed at Farmer's Market.
Made investigations and recommendations for converting the Civic Center Central Heating Station from fuel oil operation to the use of natural gas.

FOR MUNICIPAL COURT

Made investigation and recommendations for ventilating

Room 371, City Hall.

FOR PURCHASER OF SUPPLIES

Made investigation and recommendations for ventilating Blue Print Room, City Hall.

TESTING

The Laboratory and Testing Section made numerous examinations and tests for other bureaus and departments as indicated below.

	1947-48	1948-49
Bureau of Architecture	44	89
Other Bureaus of the Department	199	345
Park & Recreation Departments	20	28
Public Utilities Commission	207	511
Purchasing Department	125	69
Fire Department	149	80
Total	744	1122
Bureau of Engineering	904	1232
Total of all tests	1648	2354



MARKET, TURK & MASON STS.

Before Monument was removed so as to speed up traffic.

POST-WAR STATE AID

Under the two State Aid acts providing financial assistance to local communities for the planning and building of public works, additional applications were filed to utilize practically all available allocations to the city and substantial reimbursements were received on applications previously filed. The amounts of the several State allocations and the amounts received by the city to July 1, 1949 are shown below:

Act and Purpose	Allocation	Received
Planning Assistance Act (Chap. 47 Stats. of 1944)		
Department of Public Works		
For plans	\$ 540,800.00	\$ 418,823.26
For land purchases	249,621.72	89,474.35
Sub-Total	790,421.72	508,297.61
Recreation Department	44,698.12	3,538.57
Unassigned to any department	2,781.93	---
Total for City	837,901.77	511,836.18
Construction and Employment Act (Chap. 20 Stats. of 1946)		
For Highway projects (DPW)	398,383.79	35,068.83
For other projects (DPW)	7,959,078.97	1,447,430.26
Total	\$8,357,462.76	\$1,482,499.09

PLANNING APPLICATIONS AND REIMBURSEMENT

One new application (State No. 1213) was filed during the year under Resolution 8361 of the Board of Supervisors for planning of the North Point Sludge Line and was approved in the amount of \$7,000 by the State Allocations Board on May 3, 1949 (State Allocation No. P-1154). One application was withdrawn by the City (Application 87, Ingleside District Sewer, Section C) and three applications were settled in full. The number of active applications was thus reduced from 19 to 16 during the year. The applications which were still active on June 30, 1949 aggregated \$171.394 as listed in Table I, Appendix III.

As of June 30, 1949, there was available for future applications the sum of \$6,611.67. This is accounted for in part by the unassigned portion of the State allocation amounting to \$2,781.93, which was originally assigned to the Recreation Department. The remainder consists principally of reversions to the city's general allocation caused by refunds and release of

unused allocations for Applications 78 and 87.

As shown in the following tabulation, final payments were received from the State on three applications and refunds were made to the State because of overpayment on two applications.

Planning Projects Reimbursement - 1948-49

State No.	Planning Project	Allocation	Payments Received		
			%	Amount	Date
99 & 99A	North Point Plant	\$300,000	100	\$150,969.92	11/12/48
832	48th Ave. & Fulton				
	Pumping Plant	3,150	100	2,373.83	6/22/49
109	Stanley Drive				
	Underpass	5,206	100	3,501.05	5/23/49
Totals		\$308,356		\$156,844.80	
Less Refunds to State					
78	Upper Army St.				
	Sewer Sec. A		659.26		4/6/49
87	Ingleside Dist.				
	Sewer Sec. B		259.33		4/6/49
Total Refunds				- 918.59	
Net Planning Projects Reimbursement				\$155,926.21	

No claims were filed for reimbursement for land purchases due to the fact that very few parcels were acquired for the project covered by the approved application.

APPLICATIONS FOR CONSTRUCTION FUNDS

Seven new applications for construction funds were submitted and approved during the year. One of them was supplemental request for the North Point Sewage Treatment Plant Project under Application No. 647A in the amount of \$819,605.34. This increased the allotment for this project to \$2,957,655.34. The other six applications covered six sewer projects, including the Lake Merced Sewer Tunnel, and aggregated \$1,593,000. Application No. 881 submitted during the preceding year for the Islais Creek Bridge received approval and an allotment of \$398,383.79. on July 28, 1948. These applications covered the entire balance of the allocation to the City and County of San Francisco under the Construction & Employment Act except for reversions of \$3,558.39 which became available to the city when final reimbursement was received on applications 1140 and 1141.

The addition of six new sewer projects to the list of active applications was partly offset by final settlement of three

projects during the year. The 12 active applications as of June 30, 1949 amounted to \$7,373,547.63 as listed in Table II of Appendix III.

REIMBURSEMENT FOR CONSTRUCTION PROJECTS

Payments were received from the State during the year as follows:

State No.	Project	Amount	Date
321	Alemany Sewer Sec. "G" (Final)	\$ 62,723.82	11/5/48
1140	Hyde St. Sewage Pumping Station (Final)	23,494.55	4/26/49
1141	20th, Florida Sewers (Final)	37,447.06	4/26/49
4	Richmond-Sunset Plant Enlargement (Partial)	58,858.75	8/ 9/48
28	Lake St. Sewer Sec. "A" (Partial)	51,146.09	3/ 3/49
881	Islais Creek Bridge (Partial)	35,068.83	4/13/49
1142	Scott St. Sewer Sec. "E" (Partial)	87,969.26	5/13/49
	Total received 1948-49	\$ 356,708.36	
	Rec'd prior to July 1, 1948	1,125,790.73	
	Total received to date	\$1,482,499.09	

SUMMARY OF STATE AID FUNDS RECEIVED

The following table summarizes the payments received from the State under the two State Aid acts to July 1, 1949.

Payments Received from State			
Act and Item	1945-48	1948-49	Total
Planning Assistance Act			
Plans	\$262,897.05	\$155,926.21	\$418,823.26
Land Acquisition	89,474.35	0	89,474.35
Total Plans & Land	\$352,371.40	\$155,926.21	\$508,297.61
Construction and Employment Act			
Highway Projects	\$ 0	\$ 35,068.83	\$ 35,068.83
Other Projects	1,125,790.73	321,639.53	1,447,430.26
Total Constn. Projects	\$ 1,125,790.73	\$356,708.36	\$1,482,499.09
TOTALS - Both Acts	\$ 1,478,162.13	\$512,634.57	\$1,990,796.70

Payments received from the State from April 11, 1946 (first payment) to July 1, 1949 have been credited to City Accounts as follows:

City Accounts Credited

City Accounts	Plans & Land Construction		Total
1944 Sewer Bond Fund	\$384,658.79	\$1,447,430.26	\$1,832,089.05
Special Gas Tax Fund	106,522.85		106,522.85
Special Rd. Imp't Fund	11,166.42		11,166.42
State Hgwy Trust Fund	5,949.55		5,949.55
General Fund		35,068.83	35,068.83
TOTAL TO JUNE 30, 1949	\$508,297.61	\$1,482,499.09	\$1,990,796.70

GARBAGE DISPOSAL

Disposal of garbage and refuse by the sanitary fill method which was started in 1932 is still employed. A major change in operation has been in effect since September 25, 1947 when the railroad service from the loading ramp in San Francisco to the fill area in San Mateo County was discontinued. Since that date all garbage and refuse have been hauled from the points of collection direct to the fill site by 130 trucks of 5-ton capacity which carry from 18 to 20 cubic yards. During the past year it is estimated that about 8 acres were filled bringing the area reclaimed since 1932 to 112 acres.

OPERATIONS

The present truck delivery method has proved to be entirely satisfactory and in some respects preferable to the old railroad delivery plan. Material reaching the site can be placed at any desired point in the fill. The number of fires starting on the dump has greatly decreased under the method now in use. The sloughing off of the outer edge of the fill is under better control and the settlement which takes place is more gradual as the fill is better compacted by the more frequent passages of the bulldozer in spreading the material. The only objection from an operating standpoint is that spreading and covering operations are less easily regulated due to the fact that garbage is delivered for a longer period of the day and arrivals are somewhat irregular.

No serious trouble developed in keeping the main truck road open during the past winter, although substantial settlement occurred where the new area was filled. A new borrow pit for earth covering material was opened south of the southerly end of the fill to provide material for use with a short haul during the dry season of the year. This will permit the conserving of material in the rock quarry at the north end of the fill for use during the winter season when roads require continuous maintenance.

The Sanitary Fill Company receives 90¢ a ton from the two scavenger companies for material delivered directly to the dump and pays all costs of spreading and covering. The operations at the fill are performed by a contractor employed by the Sanitary Fill Company. The work is very efficiently handled and has evoked general commendation from the numerous engineers and other visitors interested in garbage disposal who have visited the site.

The number of sea gulls that feed on the garbage while it is being spread has unaccountably increased during the past two years, except from June to September, and the thousands that cover the site are somewhat of a problem to the laborers at work.

STATISTICS

The quantities and costs which appear in the following tabulation are based on information furnished by the contractor who handles operation of the fill. They do not include all of the expenses of the Sanitary Fill Company such as administrative and office overhead expenses.

It will be noted that the cost of cover material increased slightly during the past year. The yardage of cover material, the amount of blasting and the length of haul were reduced but the wages of the laborers were increased \$1.00 per day as of June 26, 1948. The tonnage of garbage and refuse increased during the year although the population of the City decreased somewhat. The increase is probably due to the number of new houses built thereby increasing the number of dwellings being serviced.



REFUSE WAGON BEING WEIGHED at SANITARY FILL
Tarpaulin removed.

COMPARISON OF STATISTICS FOR
CALENDAR YEARS 1947 & 1948

	Calendar Year 1947	Calendar Year 1948
Total Income	\$258,212.58	\$228,685.57
Expenses		
Operations	161,949.06	175,249.00
Roads & Depreciation		10,010.00
Administration & Inspection	44,190.97	42,300.00
Freight	49,669.58	--
Total expense	\$255,809.61	\$227,559.00
Tons of Garbage & Refuse Handled		
City of San Francisco	240,343.94 tons	253,041.61 tons
U. S. Government	21,162.22	1,053.46
Industrial Refuse - outside sources		10,063.57
	261,506.16 tons	264,158.64 tons
Cost per ton	\$.973	\$.862
Yards of earth cover	178,360	174,590
Cost of earth cover	\$70,282.50	\$72,126.00
Cost per yard of earth cover	\$.394	\$.413
Cu. yds. earth cover per ton garbage and refuse	.680	.661
*Depth of garbage and refuse for 2 feet of earth	4.16 feet	4.2 feet
Number of truckloads garbage and refuse	26,512	74,650
Number of carloads		10,073

During the calendar year 1948 - trucks hauled direct to the dump.

*Based on assumption that garbage after placing, covering, and compacting weighs 1400 lbs. per cu. yd. against 700 lbs per cu. yd. as assumed for weight of garbage.

SEWAGE PUMPING STATIONS

The sewage system of San Francisco includes at the present time twelve pumping stations, one of which forms a part of the Richmond-Sunset Sewage Treatment Plant and is operated by the sewage plant staff. The remaining eleven stations are operated under the supervision of the Electrical Section of the Division of Design. Table I of Appendix IV lists these 11 pumping stations and gives pertinent data as to their size, capacity, approximate cost and function. Tables II to XI, inclusive, of the same appendix gives in detail the operating costs of the various pumping stations. Details of the operation of the Richmond-Sunset Station are included in the description of the operation of the treatment plant.

The pumping stations are located in low-lying areas of the City, which cannot be drained by gravity into existing main sewers. Their capacities are sufficient to handle all sanitary sewage and, in addition, to take care of a portion of rainfall run-off in order to prevent pollution of shore-waters by the first scourings from the streets. Generally the stations are provided with overflow spillways so that run-off beyond the capacity of the station is discharged directly into the ocean or bay. In most cases the stations have sufficient capacities so that at least one pumping unit can be shut down to permit repairs.

All of the pumping stations have automatic float controls. At two of the larger stations, namely, Marina and Commercial, operators are on duty during two eight-hour shifts per day to perform necessary maintenance work and make required adjustments. At each of two other stations - Sea Cliff No. 2 and Parkmerced - an operator is on duty for a single shift each day. The operating staff during the year included:

- 1 Assistant Engineer I, Electrical
- 2 Operating Engineers
- 4 Junior Operating Engineers

REPAIRS AND REPLACEMENTS

During the past fiscal year, in addition to routine maintenance repairs and maintenance, the following major repairs and improvements were made at the stations indicated.

COMMERCIAL STREET STATION - Sewage pump #1 was dismantled for inspection and worn parts were replaced.

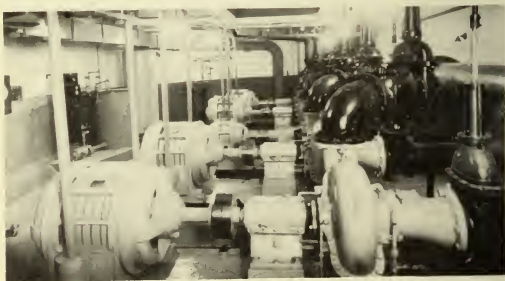
MARINA STATION - An electrically operated valve was installed on the 30-inch force main to facilitate speedy closing of the valve in case a break should occur on the line within the station. Leaky parts of the ventilating system located in the lawn over the plant were repaired or replaced.

PARKMERCED STATION - Solenoid operated valves were installed on the seal-water line to each pump in order to obtain better control of the seal-water to each unit.

VICENTE STREET STATION - All water feed-lines throughout the station were replaced.

NEW STATION COMPLETED - Construction of the La Place Canyon Pumping Station was completed and accepted in June 1949. The station is located on the south side of Portola Drive about 1300 feet east of O'Shaughnessy Blvd. The sanitary area tributary to this area comprises 35 acres, which at present consists mostly of unimproved property. The sewage is pumped into the O'Shaughnessy Blvd. sewer through a 6-inch cement-asbestos pipe laid in the southerly sidewalk area of Portola Drive. Overflow storm water passes down the natural channel to the Glen Park sewer. The two pumping units are installed in a reinforced concrete pit with a corrugated aluminum superstructure.

NEW STATION STARTED - Work was started on a new pumping station located on the south side of Fulton Street opposite 48th Avenue. This station will pick up the sanitary flow from about 82 acres lying west of 46th Avenue and north of Fulton Street, which now enters the Mile Rock sewer outlet untreated, and will discharge it into a diversion sewer leading to the Richmond-Sunset Sewage Treatment Plant. The construction of this station involves deep and difficult excavation below the existing ground water level.



MARINA SEWAGE PUMPING STATION

All underground except Vent Pipe & Entrance Hatchway.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

GENERAL DESCRIPTION

The Richmond-Sunset Sewage Treatment Plant was constructed originally in 1938 and enlarged in 1948 to eliminate sewage pollution of the ocean waters and to prevent deposits of sewage solids along the north and west shores westerly from Fort Point. Recent surveys show no visible evidence of sewage solids on the shores, and bacteriological tests indicate that the beach waters are safe for bathing except at times of storm overflow. The State of California Department of Public Health has issued a permit to the City for operation of the plant.

The plant treats the sewage from the Richmond and Sunset Districts, the residential areas of the western slope of the City, covering an area of 8,060 acres, with a contributing population of approximately 220,000 people.

The plant site, occupying an area of approximately four acres, is located in Golden Gate Park near the South Windmill east of the Great Highway. The main structures of the plant, including those constructed under the enlargement contract, are:

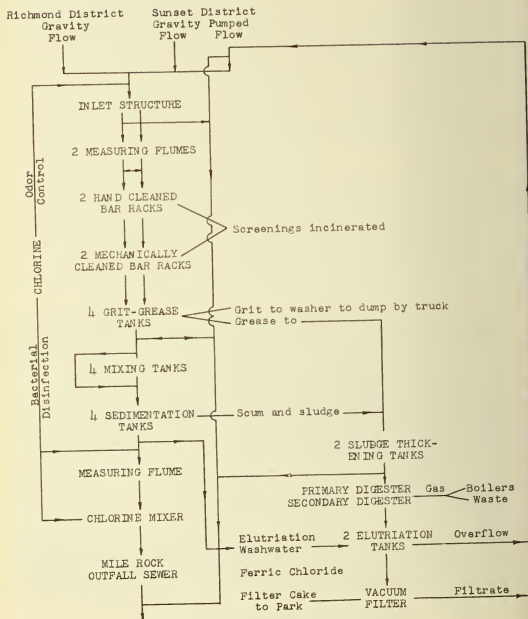
- Water Storage Building
- Pretreatment Building
 - Measuring Flumes
 - Bar Racks
 - Grit Grease Tanks
 - Chlorinators
- Mixing and Sedimentation Building
 - Sludge Thickeners
 - Mixing Tanks
 - Sedimentation Tanks
- Digesters and Control House
- Main Building
 - Sunset Pumping Station
 - Elutriation System
 - Vacuum Filters
 - Boilers
 - Laboratory
 - Storage and Shop
 - Administration
- Garage

The plant functions are shown on the Flow Diagram and operating data are given in the Summary of Operation.

LABORATORY

Approximately 13,500 routine and special analyses were made during the year as shown in the following table.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT FLOW DIAGRAM



Regular Routine Analyses

Daily:

Raw sewage and plant effluent (24-hr composites):
suspended solids, alkalinity, chlorides
Raw sludge (24-hr composites): solids, volatile matter
Digested sludge (2 levels): solids, volatile matter,
alkalinity, pH
Elutriated sludge (filter run composites): solids,
volatile matter, alkalinity, specific gravity
Filter cake (filter run composites): solids, pH
Ferric chloride for filter operation: pounds ferric
chloride per gallon
Digester gas: density

Bi-weekly:

Raw sewage and plant effluent (24-hr composites):
5-day BOD

Monthly:

Filter cake composites: nitrogen, phosphorus, humus
Sand from sand washer hoppers: volatile matter, sieve
analyses, specific gravity
Digester: solids and volatile matter inventory

Miscellaneous:

Ferric chloride shipments received: per cent ferric
chloride, specific gravity

Special Analyses and Investigations

1. Effect of circulation of sludge on digester stratification and scum formation.
2. Limited number of analyses of industrial wastes in conjunction with industrial waste survey being conducted under supervision of this plant.
3. Research for improvements of laboratory methods of analysis
4. Bacteriological tests of beach waters from Bakers Beach, China Beach, the Great Highway opposite Cabrillo Street, Lincoln Way and Vicente Street were conducted weekly starting January 15, 1949. These tests will continue as a normal plant function.
5. Field and laboratory tests at regular intervals throughout the year for control of operation of the activated sludge treatment plant at County Jail #2 and sewage treatment plant at Hassler Health Home, both in San Mateo County.

IMPROVEMENTS

Plant - General

Installed new entrance sign

Main Building

Replaced existing steel scrapers on vacuum filters with stainless steel scrapers.

A vinyon vacuum filter cloth was tried instead of wool. This cloth did not prove satisfactory, as it was not possible to prevent smearing.

MAINTENANCE AND OPERATION

Personnel

1 Superintendent
1 Assistant Superintendent and Chemist
1 Water Chemist
1 Clerk-Stenographer
1 Chief Operating Engineer
2 Operating Engineers) Day shift - Monday through
1 Jr. Operating Engineer) Saturday
2 Operating Engineers) Two shifts - one of each per
2 Jr. Operating Engineers) shift
1 Operating Engineer) Relief and maintenance
1 Jr. Operating Engineer)
2 Laborers
1 Truck Driver

Total 17

Operation

The plant was operated continuously 24 hours a day on a three-shift basis except for by-passing of the Sunset sewage during rain or for construction of the enlargements. Necessary cleaning of tanks has been accomplished in a manner to allow for operation of some of the units so that the sewage would be partially treated during this period, thus minimizing the time when the whole plant was out of service. Whenever possible, repair and maintenance have been scheduled to correlate with shutdown periods.

Maintenance

Regular schedules of operation and maintenance have been set up. Some of the functions, such as general inspection, lubrication, etc., are carried on regularly as assigned duties for plant operating personnel. In addition, a schedule for periodic inspection, repair and maintenance has been laid out as follows: (Note - the following tabulation refers to the main items requiring servicing or replacement - other items are taken

care of as needed)

Weekly:

Air filters - clean

Monthly:

Raw sludge pumps - wearing rings

Quarterly:

Sand pumps - linings

Seeding pump - wearing rings

Ferric chloride pump - impeller, shaft

Semi-annually:

Sewage pumps

Bar racks - wear plates on rake shoes

Vacuum filter - filter cloth

Vacuum filter appurtenances

Blowers

Ball bearing motors - grease change

Boilers - wash

Annually:

Chlorinators

Meters

Tank drives, chains, etc. - links, sprockets

Electrical Work:

Switchboards, panels, electrical connections - continual maintenance by Bureau of Building Repair electricians, approximating five days per month.

Painting:

Necessary painting of metal work, walls, etc., by Bureau of Building Repair painters as required.

Other Work:

Truck repair and machine work are done by Purchasing Department Shops. Carpentry, plumbing, sheet metal work, etc., are done by Bureau of Building Repair.

Replacement Parts

A stock of replacement and spare parts is kept on hand. Part repairs requiring machine work beyond the capacity of plant personnel are taken care of by Purchasing Department Shops.

PLANT ENLARGEMENT CONTRACTS

The plant enlargement contracts started in August 1946 were

completed in May 1949. During the fiscal year 1948-49 the following work was accomplished:

1. Completion of installation of drives in mixing tanks
2. Changes in Sludge Control House piping
3. Completion of installation of chlorine evaporators
4. Painting of new Primary Digester and installation of mixer drives
5. Removal of sludge from existing 80' Digester
6. Installation of new steel floating cover on 80' Digester
7. Changes of piping in Digester Control House in connection with (5)
8. Completion of changes to vacuum filter system and piping
9. Final grading and paving

Some of the units installed under the enlargement contracts were placed in operation previous to the completion date of the contract. The independent water system for the sewage treatment facilities, the effluent pumps, the ventilating system for the Mixing-Sedimentation Building and the new 100' Primary Digester were placed in operation before July 1948. The vacuum filter and elutriation system was placed in operation in December 1948, the chlorine evaporators and new mixing-sedimentation units in January 1949 and the new secondary digester in May 1949.

It was necessary to clean out the 80' Digester so that the structural and mechanical contractors could make the necessary changes as required by the contract. The cleaning operation was performed as follows:

1. For 25 days some of the tank contents were transferred to the 100' Digester and some to the elutriation tanks by gravity and pumping. Plant effluent was added to the digester to maintain continuous flow during this period. This procedure resulted in a lowered total supply with scum on the top and sand and sludge on the bottom with a clean supernatant layer between.

2. On account of the nature of the work, it was decided to have the cleaning work performed by the personnel of the Bureau of Sewer Repair under the supervision of the plant supervising personnel. Every precaution was taken to protect the workers and to prevent any possibility of forming explosive mixtures. Fresh air was supplied by a blower discharging into the tank at locations where the men were working. The air in the digester was tested for explosive mixtures and hydrogen sulphide at frequent intervals. The workers were equipped with safety belts, helmets and proper clothing. Men worked in groups with one man always checking for safety. The work was accomplished without a mishap of any kind.

3. As much of the scum as possible was removed by flushing

with high pressure hoses to the scum overflow leading to the sewer or to the elutriation tanks. After the scum was removed, the tank was drained, leaving approximately 44" of sand and sludge on the bottom.

4. This sand and sludge was flushed with high pressure hoses operated from above and from the digester floor to the main outlet. A sand and sludge pump pumped the mixture of water and sand or sludge to the sewer. It was necessary to install a screen around the outlet to protect the pump. The final cleaning operation took approximately three weeks.

The original fixed steel dome on the 80' Diameter Digester was to be modified and used for a floating cover under the enlargement contract. It was found when this dome was inspected after cleaning, that considerable corrosion had occurred in the supporting members and the plates. A completely new dome was installed with supporting members on the outside and the unit painted with three coats of bitumastic on the inside and one coat of bitumastic primer, two coats of heavy bitumastic and one coat of aluminum on the outside.

SUMMARY OF OPERATION

(For details and costs refer to tables in Appendix V)

Sewage Flows:

Millions of gallons, by gravity (365 days)	2,668.2
pumped (324 days)	1,502.6
total	4,170.8
Average daily flow, ^a mgd, by gravity	7.4
pumped	4.6
total	12.0

Screenings, cu ft: (Sunset Pumping Station not included)

Total	6,529
Per million gallons	1.55
Sand, cu yd: from grit tanks	1,993
from Sunset Pumping Station	632
total	2,625
average per million gallons	0.63

Grease, gallons: from grit grease tanks	328,100
from other units	Not determined

Chlorination, lb:	pre	122,380
	post	324,080
	total	446,460
	per million gallons, pre	30
	per million gallons, post ^b	90
Sludge Control and Sedimentation:		
Suspended solids, ppm, raw		275
	effluent	73
	per cent removed	73
5-day BOD, ppm, raw		275
	effluent	145
	per cent removed	47
Raw sludge to digester, gallons		23,521,000
	dry solids, lb	7,776,000
	total solids, %	3.94
	volatile solids, %	82.2
Digestion:		
Sludge to elutriation, gallons ^c		25,533
	dry solids, lb	2,261,600
	total solids, %	1.07
	volatile solids, %	62.5
Gas production ^d metered cu ft, to boilers		27,732,000
	to waste	20,648,000
	total	48,380,000
Vacuum Filtration:		
Hours operated		1,695
Sludge filtered, gallons		5,671,300
	dry solids, lb	1,948,800
	total solids, %	4.08
	volatile solids, %	61.6
Ferric chloride, lb		64,175
	% on dry solids	3.29
Filter cake, lb		7,143,200
	dry solids, %	27.2

a For actual time of operation.

b For chlorinated flows only.

c Estimated

d Includes estimated quantity during changes to system.

BUREAU OF ARCHITECTURE
Dodge A. Riedy, City Architect

FUNCTIONS

The Bureau of Architecture complying with requests from other Bureaus and Departments furnishes two types of architectural service.

1. Full architectural service for alterations and maintenance work and also on new construction amounting to less than \$150,000.
2. Supervising, consulting, coordinating and checking the the work of architects under contract.

On both types of work full time inspection service is provided where necessary, on minor work part time service is furnished as required.

Departments served by the Bureau of Architecture are the Board of Education, Department of Health, Fire Department, Police Department, Sheriff, Public Welfare Department, Juvenile Court, Department of Electricity, and other City Departments such as Department of Public Works, Repair Shops, Yards, City Hall, Hall of Justice, Civic Auditorium, California Palace of the Legion of Honor, and M. H. de Young Memorial Museum, War Memorial Building, Library Commission, Law Library and also some work for the Water Department and the Park Commission.

Due to the \$48,000,000.00, 1948 School Bond Issue, the Bureau of Architecture is suffering "growing pains". This Bond Issue is for a five-year program. At the time this School Bond Issue was passed, the Bureau of Architecture did not have enough personnel, or was it equipped to handle this additional amount of work. Since that time drafting room space has been acquired at No. 45 Hyde Street, where new equipment and personnel are rapidly being provided to meet these requirements. In addition to the normal amount of temporary classroom construction, alterations and maintenance work, this section will handle all work in connection with the School Department Program, including the checking of plans and specifications prepared by the Architects appointed for schools to be constructed under this 1948 School Bond Issue.

PERSONNEL

The staff of this Bureau as of June 30, 1949 consisted of:

- 1 City Architect
- 1 Assistant City Architect
- 2 Architects
- 4 Senior Architectural Draftsmen

2 Architectural Draftsmen	
1 Supervising Construction Inspector	
13 Building Inspectors	
5 General Clerk-Stenographers	
1 General Clerk-Typist	
1 Office Assistant	
31 TOTAL	

WORK COMPLETED

As in the past years, most of the work performed by the Bureau of Architecture, during the fiscal year 1948-1949, consisted of alterations, repairs and maintenance of buildings for various departments as shown in the following tabulation.

During the past fiscal year the value of the work performed was as follows:

Work completed	\$ 861,543.35	
Contracts under construction		
and work in progress	4,256,574.56	
Work under preparation	21,385,484.00	
		\$26,503,601.91

The segregation of this work by departments for which the work was done is shown in the following table; details of the class of work and the type of project will be found in Appendix II.

CURRENT DATA - SUMMARY

Showing all Work Completed, Contracts under Construction & Work in Progress, and Work Under Preparation - July 1, 1948
June 30, 1949.

Work Completed

Board of Education

School Buildings (Miscellaneous)	\$ 37,525.11	
Roofing	66,207.40	
Temporary	207,526.47	\$311,258.98

Department of Public Health

San Francisco Hospital	\$134,975.83	
Laguna Honda Home	32,929.93	
Health Center Building	9,631.25	
Hassler Health Home	19,725.00	
City Clinic	3,209.74	
Excelsior Health Center	3,557.00	

Bureau of Architecture

77

Noe Valley Health Center	\$ 7,676.00	\$211,704.75
Fire Department		5,665.00
Park Commission		
Conservatory - Golden Gate Park	17,757.00	
M. H. DeYoung Museum-Golden Gate Park	2,885.45	
Kezar Stadium - Golden Gate Park	40,565.22	
Zoological Gardens	15,008.55	
Legion of Honor - Lincoln Park	3,042.78	79,259.00
City Hall		86,611.09
Civic Center		
Civic Auditorium	74,428.40	
Veteran's War Memorial Bldg.	12,366.99	
Main Library	13,173.00	99,968.39
Retirement Building		5,252.00
Public Welfare Building		59,644.14
Miscellaneous		2,180.00
Sub-total		\$861,543.35

Contracts Under Construction & Work in Progress

Board of Education		
General	\$520,125.00	
Prefabricated Portable Classrooms	259,806.00	
Roofing	42,098.00	\$822,029.00
Department of Public Health		
Laguna Honda Home	6,528.00	
Hassler Health Home	987.00	
Psychopathic Cancer Building	2,143.00	9,658.00
Fire Department		222,085.00
Park Commission (De Young Museum)		183,784.00
City Hall		46,173.56
Civic Center (Civic Auditorium)		12,845.00
Juvenile Court (Youth Guidance Center)		2,960,000.00
Sub-Total		\$4,256,574.56

Work Under Preparation

Board of Education		
School Buildings	\$16,836,000.00	
Prefabricated	125,000.00	\$16,961,000.00

Department of Public Health	
S. F. Hospital	\$ 131,000.00
Fire Department	170,000.00
Park Commission	69,734.00
Sunset Community Center	2,885,000.00
City Hall	68,750.00
Public Library Commission	475,000.00
Juvenile Court	625,000.00
Sub-total	\$21,385,484.00
Grand-Total	\$26,503,601.91



JOHN A. O'CONNELL
Vocational and Technical Institute
Dodge A. Riedy City Architect

FUNCTIONS

The Bureau examines and reports on all applications for permits submitted to the Department of Public Works for new buildings, alterations to existing buildings; billboards and signs (Electric and non-electric); inspects all this work as it progresses; makes final inspections and issues certificates of final completion when the work is finished. It cooperates in consultations with architects, engineers, contractors and home owners in the preliminary stages of preparation of their plans, whether for new buildings or alterations to existing buildings. It reports on legislation affecting building matters and proposes new legislation as required.

PERSONNEL

The personnel of this Bureau as of June 30, 1949, consists of the following classifications:

- 1 Superintendent (Acting)
- 1 Supervising Construction Inspector
- 4 Structural Engineers (One acting
as Superintendent)
- 18 Building Inspectors
- 2 Boiler Inspectors
- 3 Clerk Stenographers

Personnel Losses

On December 1, 1948, this Bureau lost the services, by retirement, of Mr. Robert J. Cairns, who had been a building inspector in this Bureau, as well as the Bureau of Architecture, since 1925. He went to work soon after his retirement on the Metropolitan Park-Merced Housing Project and is in charge of the concrete plant which was erected on the site. He carries the best wishes of this Bureau for good health and success and pleasure in whatever he may do.

EQUIPMENT

- 21 Passenger automobiles

ORGANIZATION

Superintendent - In addition to performing the duties of his office, he takes an active part in the deliberations of various departments of the City government as well as other organizations with reference to matters of building construction, the building code, and building safety.

Supervising Construction Inspector - Under general administrative direction acts as assistant to the Superintendent in the field; assigns and supervises the work of building inspectors; prepares records and reports; checks construction progress and performs related duties as required.

Building Inspectors - One building inspector assists the Supervising Construction Inspector. He assists the public at the counter and provides them with the information they seek concerning various building regulations.

One building inspector examines all plans and details for new construction and estimates the cost thereof.

One inspector is assigned to the Metropolitan Park-Merced Housing Project and the Stoneson Housing Project. These projects represent approximately \$30,000,000 worth of construction. It was necessary to have a building inspector on these jobs constantly in order to provide thorough and continuous inspection of such major construction. It was impossible for a district inspector to take care of such a project in addition to his other duties; furthermore, it eliminates costly delays on the part of the contractors. With a building inspector continuously on the job the owners are enabled to prosecute their work in an orderly, systematic and economical manner.

Fifteen building inspectors are assigned to definite districts into which the city is divided and are charged with the responsibility for inspection work in their respective districts. This includes new construction of all types, alterations, billboards and signs. They report on all applications for construction in their districts prior to examination by the divisions of the Bureau, prepare and post certificates of final completion, check and follow up complaints, interview property owners, attend meetings of the Board of Permit Appeals, and appear before courts in matters of condemnation and prosecution.

Boiler Inspectors - They make all investigations, inspections and reports pertaining to construction of steam boilers and air pressure tanks.

Structural Engineers - They check and report on all plans pertaining to structural engineering, make field inspections, follow up matters concerning structural safety brought to their attention by the supervising construction inspector or the district building inspectors and assist other departments or bureaus in structural matters.

One engineer, highest in seniority, acts as Chief Structural Engineer and as principal assistant to the Superintendent; has wide latitude for independent and unreviewed action and decisions in establishing general engineering policies; initiates and makes studies of building code with a view to making beneficial changes for ever-changing and new materials of construction and for clari-

fication of the code; supervises the work of the other engineers in the Bureau and performs related duties as required.

Clerical Force - Takes care of all correspondence and files of the Bureau and keeps records of all matters pertaining to the issuance of certificates of final completion.

BUILDING CODE REVISIONS

Considerable work and study has been done relative to revising certain portions of the building code; for example:

The article on Boilers, Water Heaters and Tanks: Certain changes are desired and others will have to be incorporated to bring the article into conformity with regulations of the State of California.

The article on Mechanical Refrigeration: Instead of making the Safety Code for Mechanical Refrigeration of the American Society of Refrigeration Engineers our code by reference, it is desired to make up our own code in order to have a more comprehensive code.

The article on Elevators: Addition of material to cover elevators of all types rather than just residential is desired.

The section of Fire Escapes is being studied and revised in order to provide a more adequate solution to this most important subject on safety.

BUILDING CONSTRUCTION

The volume of building construction for which permits have been issued has increased from \$56,477,050 for the fiscal year 1947-1948 to \$77,802,043 for this fiscal year. The Metropolitan Park-Merced Housing Project accounts for approximately \$24,000,000 and Stonestown for \$5,000,000. Although there has been some falling off in Type 5 building construction there has been an increase in Types 1 and 3.

WORK DONE

The extent of routine operations of this Bureau for the fiscal year is set forth in the following tabulation taken from the records of the Central Permit Bureau:

Type	No. of Permits	Cost
1 A	8	\$ 4,456,000
1 B	34	32,096,269
2	--	--
3	32	2,682,775
4	40	3,013,725
5	1811	23,418,212
Iterations & Bill Boards	6076	12,135,062
Totals	8001	\$77,802,043

DESCRIPTION OF TYPES OF CONSTRUCTION

- Type 1 A - Steel frame with reinforced concrete walls and floors.
Fire resistive construction.
- Type 1 B - Built entirely of reinforced concrete. Fire resistive construction.
- Type 2 - Heavy timber construction with exterior walls of masonry.
- Type 3 - Wood frame floors with exterior walls of masonry.
Ordinary masonry construction.
- Type 4 - Light incombustible frame construction.
- Type 5 - Wood frame construction.

The following statistics of monthly reports indicate the volume of work done during the fiscal year:

Number of inspections reported by inspectors of buildings	61,681
Number of projects remaining on which permits have been issued that have not been reported completed by inspectors of buildings.	3,415
Number of complaints that have been reported adjusted by inspectors of buildings	1,486
Number of inspections reported by inspectors of boilers	2,664
Number of projects remaining on which permits have been issued that have not been reported completed by inspectors of boilers	7
Number of complaints and requests for information recorded	73
Number of complaints and requests on which initial inspections have been reported	70
Number of applications for permits examined by and approved by structural engineers	3,890
Number of applications for permits pending	40
Number of applications for permits examined and approved by plan checker	2,015
Miles traveled during the year by passenger cars on inspection service	124,731



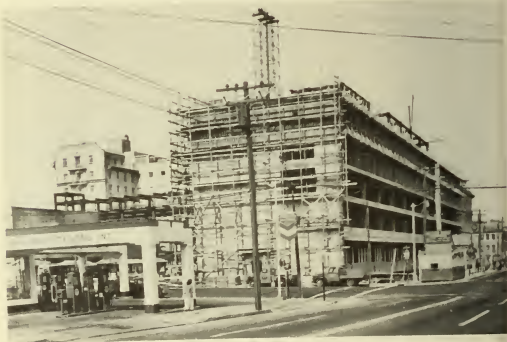
Metropolitan Park-Merced housing Project - West of Junipero Serra Blvd. opposite Holloway Ave., being erected by the Metropolitan Life Insurance Co., consists of eleven 13-story Type 1-B bldgs., each containing 153 apartments, a total of 1683.



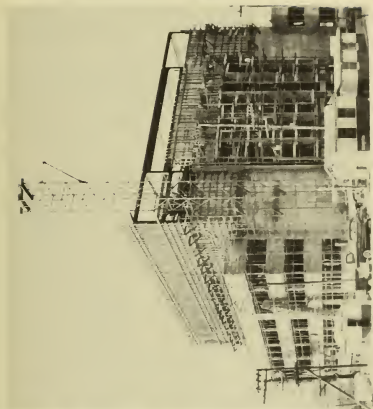
Stonestown Project - West of Junipero Serra Blvd., south of Ocean Ave., being constructed by Stoneson Bros., consists of ten 2 and 3-story Type 5 buildings, containing 323 apartments, and four Type 1-B buildings, each containing 90 apartments or 360 apartments. The project comprises a total of 683 apartments.



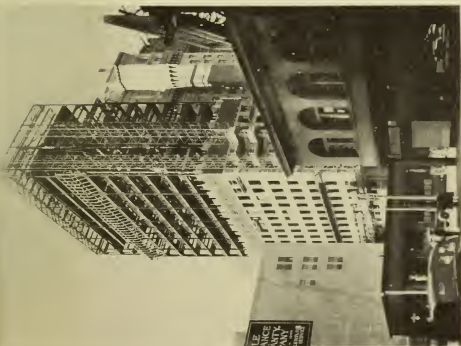
Catholic Boys High School - Phelan and Judson Avenues



Mt. Zion Hospital - Post and Scott Streets

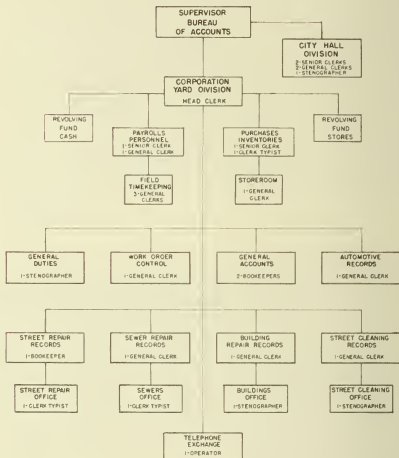


Sailors Union of the Pacific
First and Fremont Streets



Standard Oil Building Addition
Bush and Sansome Streets

ORGANIZATION CHART
BUREAU OF ACCOUNTS
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO
1948-49



PERSONNEL

SUPERVISOR	1
HEAD CLERK	1
SENIOR CLERKS	4
GENERAL CLERKS	22
BOOKKEEPERS	2
STENOGRAPHERS	9
TYPISTS	3
TELEPHONE OPERATORS	1
TOTAL	23

BUREAU OF SEWER REPAIR
Emile F. Muheim, Superintendent

The City and County of San Francisco is situated on the northern tip of a peninsula bounded on the west by the Pacific Ocean, on the north by the Golden Gate Strait and on the east by San Francisco Bay. Crowded into this 40 square mile area live 827,000 people, plus 220,000 who work in San Francisco but live in other Bay Area communities.

The general topography of the city is hilly, the highest point being approximately 900 feet above sea level. Gravity, therefore, is relied upon to carry the sewage to the various outfalls. The drainage areas are predominantly north and east, discharging raw sewage into the bay. This practice of discharging raw sewage will soon be a thing of the past as plans and specifications are now complete for the construction of additional treatment plants. The western slope of the City discharges into a treatment plant.

The climate in San Francisco is moderate, with an annual rainfall of 22 inches most of which occurs between the months of November and March.

The legal claims pending against the City and County of San Francisco, with reference to the Bureau of Sewer Repair, consists of damages to automobiles, caused as a result of ignoring red lights and barricades, or due to running into holes in the street that have not been reported to the office. Citizens file claims for various alleged accidents such as tripping over hose, plank or other material on the street, incident to our work.

FUNCTIONS

The functions of the Bureau of Sewer Repair are to maintain and repair the sewage collection system, including manholes and catchbasins, and also to install and repair side sewers between mains and traps, the latter generally being placed two feet inside the curb line. The bureau cleans the sumps of all sewage pumping stations.

The sewage collection system consists of vitrified clay pipe, prefabricated reinforced concrete pipe, brick sewers, and monolithic reinforced concrete sewers. The larger sewers were formally of brick or monolithic reinforced concrete, but the new installations include prefabricated reinforced concrete pipe up to 6' - 9" in diameter. The vitrified clay pipe is now being used non-glazed.

PERSONNEL

The personnel of the Bureau of Sewer Repair as of June 30, 1949 consisting of 138 employees, was as follows:

- 1 Superintendent
- 2 Assistant superintendents
- 3 General foremen
- 1 Engineering inspector
- 1 Clerk
- 7 Bricklayers
- 12 Hodcarriers
- 50 Cribbers
- 33 Laborers
- 11 Chauffeurs
- 17 Sewer cleaners
- 138 Total personnel

ORGANIZATION

The Superintendent has two assistant superintendents who exercise direct supervision over three general foremen. The crews are employed eight hours per day, Monday through Friday, with a night shift on duty from 4:30 p.m. until 12:30 a.m.

On Saturdays, Sundays, and holidays, a maintenance truck is on duty taking care of current jobs. This truck is on call after hours every day in the year. An assistant superintendent or a general foreman is on call at his home at all hours of the day or night throughout the year.

EQUIPMENT

Owned by City

- 10 Elgin eductors
 - 1 Air compressor, mounted on truck
 - 1 Air compressor, trailer type
 - 4 Power-driven sewer cleaning units
 - 1 Pump, trailer type
 - 2 Pumps, portable
 - 1 Blower, portable
 - 2 Lighting units, portable
 - 6 Passenger automobiles
 - 1 Mosquito control unit - trailer type
- Power-driven flexible rod, windlasses, cables, buckets, wooden rods, hose, sewer lamps, flares, lanterns, barricades, belts, lines, gas masks, goggles, etc.

ROUTINE OPERATIONS

A typical working day starts at about 7:30 a.m., when the general foremen arrive at the office to get the orders ready for the men arriving at 8:00 a.m. Before 8:00 a.m., many of the field crews ring in for material, additional instructions, or assignment to a new location. At 8:00 a.m., the eductor crews are dispatched to their regular districts or go on special assignments. Flushing crews go out on complaints, investigations, or their regular sewer maintenance. At 10:00 a.m., these men ring in for further instructions. In general, this routine is repeated in the afternoon.

During the day, the clerk answers telephone calls from citizens reporting holes in the street, plugged-up catch-basins, sewers not functioning, and articles dropped into catch-basins or through the plumbing fixtures, such as keys, rings, false teeth, and precious stones. Many of these articles are retrieved and returned to their owners.

At 4:45 p.m., the eductor and flushing crews report to the office with the results of the day's work. These reports are tabulated and distributed to the assistant superintendent or general foremen responsible for that particular phase of the work. By this time, the night crew has reported and their instructions have been issued. Five o'clock sees the day officially closed. Complaints coming in after this hour and up until 12:30 a.m. are taken care of by the night crew. After 12:30 a.m. and until 8:00 a.m. the following morning, the material truck driver is on call for routine complaints. Complaints of a more serious nature are referred to the assistant superintendent or general foreman on call.

NUMBER OF JOBS

Complaints investigated	8,953
Repairing pipe sewers	478
Repairing and installing side sewers	1,285
Repairing concrete sewers	6
Repairing brick sewers	126
Building manholes	43
Building catch-basins	93
Repairing catch-basins	225
Catch-basins cleaned by eductors	12,136
Cubic yards of silt removed from catch-basins by eductors	11,920
Catch-basins cleaned by hand	135
Cubic yards of silt removed from catch-basins by hand	32
Cubic yards of silt removed from sewers	2,099

UNUSUAL SEWER BREAK

On the afternoon of April 28, 1949 at about 3:15 P.M., a report came in that there was a crack in the center of Octavia Street between Vallejo and Green Streets. A crew was sent to examine what appeared like a routine matter. They went to the scene and lifted the manhole cover near the crack and were greatly surprised to see no brick manhole and only a large cavity. The office was notified and the assistant superintendent went to the scene. On going down the manhole, they were dumbfounded to find a huge cavern about 203 feet long and averaging about 12 feet in width and depth and the manhole lying on its side a short distance from the opening. Barricades were erected and the street closed to traffic. The Fire Department was notified not to travel over this block and the Police Department and all public utilities companies concerned were also notified.

Investigation seems to show that a break had occurred at some time in the 16 V.C.P. sewer which was laid in 1892. The running water washed the sand away which must have entered the Green Street sewer but no record was found of any more than routine cleaning of this sewer. In some places the broken pipe had been carried a considerable distance. The street is on a 10.91 percent grade 68'-9" wide with 15 foot sidewalks and paved with a 14 foot brick center strip on a concrete base with the side pavement of asphalt on a concrete base. The pavement had held up so well that no breaks had shown before altho the ground under the brick center strip was washed away.

Materials and equipment were on the job the next morning and the bracing of the pavement started immediately and on May 2, 1949 laying of new 15" V.C.P. was started. Sand backfill in the amount of about 1000 cubic yards was placed through holes cut in the pavement where necessary. The bracing was removed as the backfilling progressed and the whole backfill flooded with water.

The City was very fortunate that no break occurred in the pavement as a serious accident could have taken place and also fortunate that no damage had occurred to the abutting property.



Equipment Assembled on Job
OCTAVIA STREET SEWER BREAK



Timbering & Pipe Laying



OCTAVIA STREET SEWER BREAK

Showing Condition before Timbering

BUREAU OF SEWER REPAIR
Repairs to Main Sewers - 1948-1949
SUMMARY OF COSTS

	Labor	Material	Trucks	Spec. Equip.	Total
Repairs to Pipe sewers	\$120,673.64	\$16,749.52	\$12,157.55		\$149,580.71
Repairs to Brick sewers	45,638.86	3,589.04	1,903.06		51,130.96
Bldg. manholes & catch-basins	17,991.91	3,852.03	1,703.24		23,547.18
Repairs to manholes	8,651.05	1,967.78	625.06		11,243.89
Repairs to catch-basins	20,979.46	3,600.21	1,894.10		26,473.77
Repairs to concrete sewers	529.11	35.41	29.84		594.36
Eductors	102,981.29	3,923.15	14,592.27		121,496.71
Sewer flushing	49,528.07	2,682.59	26,796.90		79,007.56
Sewer cleaning	70,336.18	4,363.20	6,185.05		80,884.43
Hand cleaning catch-basins	434.99	13.42	20.47		468.88
Miscellaneous	27,834.84	2,242.65	5,470.96		35,548.45
NORMAL EXPENDITURES	\$465,579.40	\$43,019.00	\$71,378.50		\$579,976.90
1 Portable, Gas Engine				172.20	
Driven - 6 H.P. - Air					
Cooled Hoist					
2 Eductors - Latest Model				17,457.50	
Type - Elgin Model E					
TOTAL EXPENDITURES	\$465,579.40	\$43,019.00	\$71,378.50	\$17,629.70	\$597,606.60

BUREAU OF SEWER REPAIR Side Sewers Installed and Repaired - 1948-1949

SUMMARY OF COSTS

No. S/S	Deposit	Labor	Matl.	Cartage	Inspn.	Paving	Extras	Over- head	Comp- ressor	Total	Refund	Excess
JUL 97	\$15292.90	\$7026.77	\$ 596.75	\$400.00	\$190.00	\$2778.40	\$418.72	\$1735.12	\$157.00	\$13302.76	\$2803.94	\$813.80
AUG 121	18960.00	7990.34	787.85	465.00	236.00	3283.20	475.72	2009.98	165.00	15413.09	3955.62	408.71
SEP 97	16040.00	6693.47	541.45	413.00	184.00	2499.20	403.62	1630.87	147.00	12512.61	3821.43	294.04
OCT 103	16570.00	6936.05	666.05	442.00	202.00	2886.40	435.68	1754.26	134.00	13456.44	3295.07	181.51
NOV 116	16400.00	6685.25	727.10	440.00	220.00	3056.00	438.77	1755.92	139.00	13462.04	3201.56	263.60
DEC 126	20600.00	9611.64	878.00	554.00	248.00	3808.00	740.62	2401.99	173.00	18415.25	2855.11	670.36
JAN 127	18410.00	7651.22	894.00	505.00	244.00	4275.00	728.26	2164.20	146.00	16607.68	2348.34	546.02
FEB 104	15500.00	6472.51	728.40	435.00	190.00	3123.90	320.17	1711.19	145.00	13126.17	2886.42	512.59
MAR 147	21715.00	8834.39	1095.60	502.00	268.00	4719.60	490.29	2413.90	186.00	18509.78	4030.80	825.58
APR 98	14935.00	6479.30	739.20	402.00	192.00	3320.10	407.14	1748.10	127.00	13414.84	2290.84	770.68
MAY 89	14100.00	5872.21	761.00	397.00	172.00	2854.80	179.76	1553.11	125.00	11914.88	2436.99	251.87
JUN 60	12325.00	4898.56	674.00	344.00	142.00	2473.20	155.37	1317.83	110.00	10114.96	2511.20	301.16
Totals \$1285		\$85151.71		\$5299.00		\$39077.80		\$22196.47		\$170250.50		\$5839.92
	\$200847.90		\$9089.40		\$2488.00		\$5194.12		\$1754.00			\$36437.32

Bureau of Sewer Repair

BUREAU OF STREETS

W. S. Merrill, Acting General Superintendent

The Bureau of Streets is responsible for the maintenance, repair and cleaning of all streets and boulevards, including State Highways within the City and County of San Francisco, except those streets abutting the water-front and which are under the jurisdiction of the State Board of Harbor Commissioners as established by the statutes of the Legislature of the State of California. The work includes the maintenance and repair of wooden and concrete stairways including the pipe railings which are part of the street in hilly regions. It is also responsible for the operation and maintenance of bridges at Third Street and Channel, Fourth Street and Channel, and Third Street and Islais Creek. The bridge at Third Street and Islais has been closed since January 10, 1949 to construct a new and modern double leaf bridge.

The Bureau is divided into two divisions: Street Repair and Street Cleaning. Operations of each division will be presented separately.

DIVISION OF STREET REPAIR

FUNCTIONS

The maintenance and repair of over 800 miles of streets is a continuous job. A clause in the Charter of the City and County of San Francisco that limits the amount expendible on any one job limits the size of the job that this division can do; due to this, a contract was let to resurface some streets and more will be done in this manner during the coming fiscal year.

This division resurfaces the track area for the Municipal Street Railway System, operates the City Asphalt Plant and the bridges, removes fallen trees from streets after storms, clears away landslides and removes sand from the streets in sections of the City where the property has not been built upon.

Many worn out street surfaces were repaved with an asphalt wearing surface and the area surfaced was 50% more than in the preceding year necessitating the employment of an extra crew. Due to the removal of street car tracks on various streets, our inter-departmental work for the Municipal Railroad dropped off greatly giving an opportunity to devote more time to regular street repair maintenance. The amount spent for maintenance was \$157,000 more than for the fiscal year 1947-48.

An additional sealing unit was activated during the fiscal year so that we now have three units in operation. We have been able to seal almost all the boulevards and state highways in the city and so remove the unsightly cracks and prevent the occurrence of transverse lips. The lineal feet of crack sealing during the past fiscal year exceeded that of 1947-48 by about 45%.

The tonnage at the asphalt plant increased 5358 tons over the last fiscal year and the average cost increased \$.49 per ton due to an increase of wages and materials.

Antiquated equipment has been disposed of or redesigned and rebuilt in the Department shops so that with the new equipment which we have procured from time to time, the Division is fairly well streamlined and modern.

Mr. Preston W. King, General Superintendent of Streets for many years has been on sick leave since November 2, 1948.

PERSONNEL

The personnel as of June 30, 1949 was as follows:

Supervising	1 General Superintendent (also in charge of Street Cleaning Division)
	1 Supervisor
	3 General foremen
Per Diem	1 Foreman - Asphalt finisher
	11 Sub-foremen - Asphalt finishers
	32 Asphalt workers
	3 Labor foremen
	53 Laborers (inclu. pneumatic tool operators)
	22 Chauffeurs
	4 Granite cutters
	3 Cement finishers
	5 Cement finishers helpers
	1 Paver
	3 H & P Engineers
	1 Caterpillar operator
	2 Watchmen
Municipal Asphalt Plant	1 Foreman
	3 Mixer dryermen
	2 Asphalt workers
	1 Stationary engineer
	3 Laborers (1 Night watchmen for boilers)
Bridges*	1 Chief operating engineer ($\frac{1}{2}$ time bridges $\frac{1}{2}$ time bldgs.)
	6 Operating engineers
	1 Operating engineer (relief)
	6 Watchmen
	1 Watchman (relief)

*When the new Islais Creek Bridge is reopened, there will be 3 more Engineers, 3 more Watchmen and their reliefs.

ORGANIZATION

Supervising	1 General superintendent 1 Supervisor 3 General foremen
Municipal Railway work	As needed - interdepartmental work order.
Crack sealing	4 Sub-foremen asphalt finishers 15 Laborers 3 Chauffeurs
Asphalt repairs	1 Foreman asphalt finisher 6 Sub-foremen asphalt finishers 16 Asphalt finishers 31 Asphalt workers 3 H. & P. Engineers 12 Chauffeurs
Brick and basalt block repairs	1 Paver 1 Laborer
Broken & depressed curbs	1 Granite cutter 2 Laborers
Dressing curbs	3 Granite cutters
Sidewalks and angular corners	3 Cement finishers 5 Cement finishers helpers 1 Chauffeur
Miscellaneous work	1 Sub-foreman asphalt finisher 6 Laborers
Clean-up	3 Labor foremen 20 Laborers 3 Chauffeurs
Yards	2 Laborers 1 Asphalt worker 2 Watchmen
Temporary roads and dumps	1 Laborer 1 Caterpillar operator
Compressor units	3 Chauffeurs 6 Laborers

EQUIPMENT

The following equipment is now in use in the Division of Street Repair:

- 18 5-Ton Dump trucks
- 1 Low-bed truck - Doane
- 4 1-Ton Pick-up trucks
- 4 *5-Ton Bitumul spray rigs

- 4 200 Gal. Spray Tanks - Littleford
- 4 #105 Compressors (Chassis mounted)
- 1 #105 Compressor (Portable trailer)
- 1 8-Ton Gas roller - Galion
- 2 5-Ton Gas roller - Galion
- 2 Trailer rollers - Littleford
- 1 Tractor
- 1 Road blade
- 1 Sand loader
- 2 Surface heaters - Motor driven
- 1 Surface heater - Hand operated
- 6 Passenger cars - Supervisory
- 9 Hired trucks

*The bitumul trucks were ordinary 4 cubic yard trucks and were re-designed and re-built in our shops exclusively for crack sealing of pavements. Each truck has a reverse cab for the crew, a 60 cubic foot compressor mounted on the body and carries 3 cubic yards of sand and gravel in a divided body. A 200 gallon Littleford emulsion spray rig is towed behind this truck, making a complete unit.

The total expenditures of the Division for the fiscal year 1948-49 were \$1,167,735.38, consisting of four main items, to-wit:

Bridges	\$ 86,203.02
Asphalt Plant	145,693.03
Interdepartmental Services	225,770.29
General Repairs	710,069.04
Total	\$1,167,735.38



New Galion Road Blade & Caterpillar Tractor
used for maintenance of temporary roads

STATISTICAL DATA

Cost of Operating Bridges

1948	Third Street	Fourth Street	Islais Creek	Totals
July	\$ 2,767.35	\$ 2,624.72	\$ 3,133.56	\$ 8,525.63
August	3,450.67	2,609.23	3,157.56	9,217.46
September	2,844.09	2,815.99	3,177.04	8,837.12
October	2,608.44	2,626.03	3,044.73	8,279.20
November	3,121.20	2,781.06	2,736.53	8,638.79
December	2,771.23	2,685.67	2,725.08	8,181.98
1949				
January	2,606.53	2,539.89	1,219.49	6,365.91
February	2,919.35	3,059.78	New	5,979.13
March	2,698.52	2,944.50	bridge	5,643.02
April	2,645.38	3,006.72	under	5,652.10
May	2,719.13	2,869.04	cons't	5,588.17
June	2,702.01	2,592.50		5,294.51
	\$33,853.90	\$33,155.13	\$19,193.99	\$86,203.02

Cost of Operating Municipal Asphalt Plant

1948	Output (Tons)	Cost of Labor and Materials	Cost Per ton
July	\$ 1,997.35	\$ 9,004.02	\$4.508
August	3,738.20	13,763.65	3.682
September	3,358.85	12,567.01	3.682
October	3,382.90	12,367.68	3.656
November	2,864.00	11,628.53	4.060
December	1,450.40	7,695.73	5.305
1949			
January	2,882.05	11,858.66	4.114
February	2,742.00	12,425.65	4.531
March	2,059.40	10,565.67	5.130
April	3,892.85	14,757.00	3.791
May	3,886.15	14,248.50	3.666
June	3,992.10	14,810.93	3.710
	\$36,246.25	\$145,693.03	* \$4.150

*Average cost per ton for 12 month period.

Note: 1948-49 \$4.15
1947-48 3.66

\$.49 per ton cost over 47-48 due to increase of wages and material over previous year.

Tonnage: 1948-49 \$36,246.25
1947-48 30,888.00
\$ 5,358.25

Bureau of Streets

Interdepartmental Work

Major Streets, paving	470,811 sq.ft.)	
Major Streets, crack sealing	570,252 lin.ft.)	\$ 89,122.98
Side sewers, paving & cleanup	47,390 sq.ft.	45,667.41
Municipal Railway, paving	380,272 sq.ft.	65,327.01
State Highway 2, paving	47,379 sq.ft.	6,268.92
State Highway 55, paving	18,130 sq.ft.	1,191.14
State Highway 56, paving	1,331 sq.ft.)	
State Highway 56, crack sealing	68,600 lin.ft.)	2,139.56
State Highway 68, paving	4,645 sq.ft.)	
State Highway 68, crack sealing	268,861 lin.ft.)	8,479.05
Public Works, paving	7,240 sq.ft.	1,440.62
Building Repair, paving	17,490 sq.ft.	2,715.29
Farmer's Market, paving	1,000 sq.ft.	160.91
Hassler Health Farm, paving	3,800 sq.ft.)	
Hassler Health Farm, crack sealing	114,500 lin.ft.)	1,323.25
Board of Education, paving	12,800 sq.ft.	905.91
Candle Stick Cove		
Fleishhacker Zoo, paving	2,400 sq.ft.	323.95
County Jail, paving	1,750 sq.ft.	196.35
Controller		460.84
Sewer Repair		47.10
Personal Service		
Total		\$225,770.29

GENERAL REPAIRS TO STREETS

	Lineal Ft.	Square Ft.	Cost
Asphalt repairs		3,604,877	\$369,902.92
Basalt repairs		114	179.95
Brick pavement repairs		7,258	8,224.67
Concrete pavement repairs		8,125	8,683.31
Crack sealing	3,492,225		85,942.90
Granite curb redressed	5,516		11,181.09
Granite curb reset	8,182		24,309.85
Concrete curb reset	7,106		12,933.52
Main sewers - paving		34,277	28,243.22
Sidewalk		30,612	23,910.60
Temporary roads			6,729.15
Fire Dept. - paving			- - -
Dept. of Elec. - paving		2,939	1,031.03
Removal of Granite curb (To yard or dump)			610.73
Setting Duck bumps)			
Safety zones - build)			335.84
Safety zones - removal)			
*Miscellaneous work			56,321.12
Work performed by other Dept.			53,091.84
Miscellaneous purchases			5,594.51
Equipment purchases			11,146.85
Asphalt plant repairs			1,695.94
Total			\$710,069.04

*Miscellaneous work covers the cartage of equipment, removal of sand in Sunset and Parkside Districts, removal of trees and debris after storms, cleaning up slides, repairing various stairways and structures, cleaning and repairing various spillways, etc.



Cracks cut out prior to patching.
Concrete gutter blocks are illegal-dropped curbs are proper.



MUNICIPAL ASPHALT PLANT

DIVISION OF STREET CLEANING

The division is in need of additional new equipment for enlargement of its fleet and also for replacement of old equipment which is out-dated and also expensive to maintain; there is also need for more laborers and more chauffeurs. These increases are necessary to give the City the better job and also due to opening of new subdivisions and extension of streets.

The unusual amount of street work due to removal of street car tracks and the accompanying work of the public utilities has created a problem for this division. Merchants and residents have clamored for extra service due to the dirt and dust created and we have been severely taxed in an effort to aid.

An unusual number of parades added to our clean-up work and it appears the coming year will be similar.

Spillage of oil, paint etc., on our streets, both day and night, have brought many calls which must be promptly taken care of in order to protect life and property.

We have endeavored to keep our streets clean and sanitary with the equipment and men allotted to us.

FUNCTIONS

The functions of this division are of necessity a matter of routine procedure. We are responsible for the sanitation and cleaning of approximately 1600 curb miles of streets, 5 pedestrian underpasses, the Stockton Street Tunnel, numerous pedestrian stair and passageways as well as vacant City-owned lots in built-up sections of the City.

The street cleaning and debris collected is hauled to the two dumping grounds, one located at Alemany Boulevard and Orizaba Avenue, the other at Davidson Avenue and Jennings Street, where they are disposed of by the fill and cover method.

Dumped garbage, which the division is forced at times to pick up, is hauled to the sanitary fill at Bayshore.

PERSONNEL

The personnel as of June 30, 1949 was:

Supervisory	1 General Superintendent (also in charge of the Division of Street Repair)
	1 Supervisor
	4 District Directors
Per diem	12 Labor Sub-foremen
	46 Chauffeurs
	1 Gardener
	262 Laborers (including 132 blockmen)

ORGANIZATION

The regular work week is five days or 40 hours a week and a crew of 1 Flusher and 1 Motor Sweeper is used five nights a week. Saturday from 6 a.m. to 10 a.m. and 1 p.m. to 5 p.m. and Sundays from 6 a.m. to 10 a.m., there are skeleton crews covering the main business sections of the City.

The City is divided into four major districts, each under a district director. The main traveled streets requiring daily or near daily service are swept by 132 blockmen. There are 10 sweeping gangs each of which cleans a large residential district and the gangs are assisted by 7 motor sweepers which cover 7 motor sweeper routes. The City is divided into 10 districts with a paper truck crew to cover each and remove papers and eyesores which gives the streets a more presentable appearance as our regular sweeping units would not cope quickly with the carelessly strewn paper and litter. Seven motor flushers divided into 7 routes cover the main congested areas to aid in sanitation and assist the sweepers by flushing and holding litter to the curbs. The street cans used by the blockmen are serviced by 5 street can truck crews. There are 5 utility trucks used for various purposes such as complaints, the produce district, and projects needing service for which the other units cannot be spared.

On Saturday morning 27 blockmen, 1 can truck, 1 utility truck, 1 motor flusher and 1 motor sweeper are used. On Saturday afternoon 15 blockmen, 1 can truck and 1 motor flusher are used. On Sunday morning 30 blockmen, 3 can trucks, 1 motor flusher and 1 motor sweeper are used.

Three garages are in advantageously chosen locations: 11th and Bryant Streets; 1725 Lombard Street and 2350-19th Avenue (Sunset District).

The cost of operating the division including labor, materials, and equipment for the fiscal year 1948-49 was \$1,231.709.

OPERATIONS

	Five days	Five nights	Saturday A.M.	Saturday P.M.	Sunday A.M.
Blockmen	132		27	15	30
Sweeping gangs	10				
Can truck routes	5		1	1	3
Utility truck routes	5		1		
Paper truck routes	10				
Motor flusher routes	7	1	1	1	1
Motor sweeper routes	7	1	1		1

EQUIPMENT

- 6 Trucks-Leach body mechanical loaders - $13\frac{1}{2}$ cu. yds. capacity
- 2 Trucks - Heil Load Packer - $13\frac{1}{2}$ cu. yds. capacity
- 26 Dump trucks - varying capacities, 5 cu. yds. to $13\frac{1}{2}$ cu. yds.
- 3 Flat bed rack trucks for parade clean ups and special work
- 3 Standard Elgin motor sweepers
- 1 Standard Austin motor sweeper
- 5 Austin Patrol motor sweepers
- 7 Motor flushers
- 5 Staff cars for supervision
- 110 Street buggies
- 1300 Street cans
- 121 Can sheds



Progress in Street Sprinkling Equipment



1929



1949

IMPROVEMENT IN EQUIPMENT for
Collecting from Street Refuse Cans

BUREAU OF BUILDING REPAIR
R. A. Chisholm, Superintendent

FUNCTIONS

This Bureau is primarily a maintenance and repair organization and does not undertake any major construction. The main objective is to give service to all City departments requesting it, and we have succeeded without any major complaints.

It furnishes labor and materials for the repair, alterations, and painting of City-owned buildings that are under the control of the Director of Works and performs similar services for the Board of Education and other municipal departments under work order procedure.

An extensive survey was made of school buildings by the Fire Department, Health Department and Industrial Accident Commission and on their findings, work orders were issued to this Bureau in excess of \$100,000. Additional employments were necessary to meet these demands. To date about 50% of this work has been completed.

An Industrial Illumination Survey was made of the machine shops in the high and junior high schools and has made necessary painting and electrical work in all these buildings. This will keep these crafts busy for months.

The acquisition of property and improvements for the widening of Army Street and the Bayshore Freeway gave the City possession of a considerable number of occupied dwellings which the occupants were allowed to continue to occupy upon a rental basis. These places had not been properly maintained during the war and the period immediately following. This situation put a tremendous load on the Bureau as it was necessary to make emergency repairs with materials of various sorts still in short supply.

The Bureau furnished labor and material for traffic striping, pedestrian lane markings at street intersections, and markings for loading and parking zones on curbs, bus stops and safety zones.

The Bureau, in addition to the above, furnishes personnel for the operation of the City Hall, Hall of Justice, Health Center Buildings, Emergency Hospitals, Police Stations, and Fire Houses, and is also responsible for the operation of the Civic Center Power House which furnishes heat to the Civic Auditorium, Public Library, Health Center Building and City Hall.

PERSONNEL

The personnel includes one superintendent, one assistant superintendent and seven general foremen supervising 187 to 191

mechanics, supplemented by additional seasonal workers representing 13 building crafts, employed in repairs and alterations, and 106 employed in operational work.

The Classification of employees is:

Repairs:	1 Superintendent
	1 Assistant superintendent
	7 General foremen
	30 Plumbers
	16 Steamfitters
	15 Sheet metal workers
	22 Electricians
	45 Painters
	20 Cement finishers and cement workers
	28 Carpenters
	4 Locksmiths
	4 Glaziers
	2 Plasterers
	1 Tile setter
	2-4 Bricklayers
	Additional seasonal workers
Operational:	2 Chief operating engineers
	7 Operating engineers
	5 Junior operating engineers
	16 Elevator operators
	1 Supervisor of janitors
	5 Foreman janitors
	58 Janitors
	2 Janitresses
	7 Window cleaners
	3 Watchmen

ORGANIZATION

Plumbing division - 30 men

There are 8 to 10 men on regular assignments to the Fire Department, City Hall, San Francisco Hospital, County Jail #2, Hall of Justice and Laguna Honda Home; and at different times during the day, it is necessary to send additional men to take care of emergency calls. Miscellaneous repairs to toilet facilities etc. in school buildings, require 6 to 8 men. On work orders for repairs and new installation of plumbing facilities, from 6 to 8 men are constantly employed; but due to labor and material shortage, we are not up to date in this work. The Recreation Department keeps two men, with a truck busy every day just taking care of emergency calls. Calls from the Emergency Hospitals, Health Buildings and Women's Jail Quarters receive priority over other calls. With the addition of two panel-body trucks, we have been able to catch up on a large backlog of work orders.

Steam Division - 16 men

Four men are regularly assigned to the City Hall, Hall of Justice, Laguna Honda Home and San Francisco Hospital. The Board of Education keeps 3 or 4 men busy on emergency repairs at all times; others are engaged on special work orders for renewal of steam lines; traps and vacuum equipment. The steam lines around the City Hall area need to be serviced and repaired at least once a year. The Municipal Railway, Fire Department, Emergency Hospitals, Public Welfare Department and Real Estate Department keep the rest of the crew steadily employed.

Sheet Metal Division - 15 men

The Bureau does not assign the men of this craft to any particular building. The work is mainly repairs of cornice work, ventilating systems, tile roofs and metal doors of various buildings. The Division makes street cans, buggy pans, and scoops for the Bureau of Streets.

A portable engine-driven welder has been secured which has greatly helped in repairing fence and gate work for the various departments.

Electrical Division - 22 men

General - Our personnel problems engendered by war-caused manpower shortages have been solved. We are now able to requisition and obtain competent mechanics as needed to handle our work load. During the year we have made many improvements and replacements to the electrical facilities in the buildings directly under the responsibility of the Director. We have also handled an increasingly heavy load of work requests from other departments. Of 2,033 requests for electrical service by the Board of Education we cleared 1,991 by the close of the fiscal year 1948-49.

Playground lighting service by this department is increasing and will continue to increase with the opening of new night activity fields by the Recreation Commission. During the year the Recreation Commission explored the economics of having this sort of service performed under private contract, but owing to the unpredictable nature of the work, contractual relations proved unsatisfactory.

We now operate four trucks as "shops on wheels" and are prepared to handle any emergency for any department.

Painting Division - 45 men

Four men are on regular assignment at the City Hall, San Francisco Hospital and Fire Department.

There are twelve men on street traffic painting under orders from the Engineering Bureau. They are required to work on Sun-

days, and during the summer are out at daylight to do work in the congested districts. Curb painting under orders from the Police Department occupies the time of four men; they operate from two trucks, covering different parts of the City. All of the metal letters, or stencils (as they are called) that are necessary in this work, are made up in the Sheet Metal Shop. Two men are assigned to the Board of Education's regular monthly Miscellaneous Work Orders and are busy touching up all repair work of the other trades. There are from twelve to fifteen men continually employed on work orders from the School Department, Superior Courts, Public Utilities (San Francisco Airport) Public Welfare, Health Department, Department of Public Works (Budget), Purchasing Department, Real Estate Department, War Memorial Commission, and various other departments.

Cement Work Division - 20 men

This division takes care of all requests from all the other divisions in this Bureau to assist in their work, such as opening up ground for broken water pipes, choked sewers, drilling for electric conduits and replacing walks and yards which have been opened up. It has four to six men working continuously in school yards filling in depressions and bad cracks in the asphalt work. This division repairs and maintains all street signs.

Carpentry Division - 28 men

There are six or seven men assigned regularly to the City Hall, Hall of Justice, San Francisco Hospital and Fire Department.

Five men work on miscellaneous school requisitions taking care of complaints such as door and window repairs, replacing door checks, various kinds of cabinet work, yard benches and other jobs too numerous to mention.

The remaining ten to sixteen men are always busy on work orders from other City Departments doing all kinds of alteration work, including bridge repair (replacing planking), and putting up and removing stands and bleachers on orders from the Chief Administrative Officer.

Miscellaneous Trades Division

Locksmiths - Four locksmiths are constantly engaged answering emergency calls from all departments of the City, especially the Recreation Department--vandals are continually tampering with locks and breaking into club houses. The School Department lock problem is very serious as the master keys are often lost or stolen, with the result that the schools are entered at night and badly damaged, and of course, it is then essential to change all locks. This happens repeatedly.

Bureau of Building Repair

Glaziers - 4 men

Continually replacing broken glass, especially during vacation periods.

Plasterers - 2 men

Tile Setter - 1 man

Busy on patching and repair work in all City-owned buildings.

Bricklayers - 2 to 4 men

These men work only during the school vacation period at which time school boilers are re-bricked.

STATISTICAL DATA

Operations for the year entailed the following expenditures:

Superintendence	\$ 46,378.95	
Building operations	345,036.15	
Yard & shops	11,565.18	
Carfare, towel service, etc.	6,918.42	
Emergency leaves	3,827.37	
Vacations	4,668.48	
Fuel oil	45,805.57	
Automotive repair	4,387.49	
		\$468,587.61

Maintenance and repair of general government buildings performed with funds allotted to the Bureau consisted of:

Fire stations	\$ 23,383.28	
Police stations	4,158.62	
County jails	7,260.99	
Hall of Justice	16,591.59	
San Francisco Hospital and		
Laguna Honda Home	40,024.16	
Juvenile Detention Home	911.31	
Miscellaneous structures	833.46	
Equipment purchase	7,521.27	
		\$145,288.90

Work order performance appeared in three general divisions:

Schools	\$617,527.81	
Traffic striping	144,361.81	
Various	258,865.34	
		\$1,020,754.96
Total		\$1,634,631.47

CENTRAL PERMIT BUREAU
S. J. Rosenblum, Supervisor

FUNCTIONS

The Central Permit Bureau is a subdivision of the Department of Public Works under H. C. Vensano, Director, and the large volume of business reported in 1947-1948 continued although during the last half of the year a slight recession became apparent in line with the general economy of the country.

As prescribed by Charter provisions and ordinances of the City and County of San Francisco, the function of this bureau is the reception of applications and the routing to and processing of same by interested departments and bureaus for approval or disapproval. On receipt of the necessary approvals, it is the duty of this bureau to issue permits predicated upon the applications and to collect the necessary fees in payment. Permits of occupancy are issued by this bureau in accordance with the provisions of Section 808 of the 1947 Building Code.

The Supervisor of the Central Permit Bureau also acts as the Cashier for the Department of Public Works. All receipts of the department are transmitted and cleared by him for daily deposit with the City and County Treasurer, as prescribed by Section 82 of the Charter.

PERSONNEL

Personnel of the bureau, as of June 30, 1949, was as follows:

- 1 Supervisor
 - 1 Senior Clerk
 - 1 Senior clerk-typist
 - 1 General clerk
 - 1 General clerk-stenographer
 - 4 General clerk-typists
 - 1 General clerk-typist
- (4/6/49 to 6/30/49)

WORK PERFORMED

Permits of especial interest which were issued during the fiscal year 1948-1949 were for two major private housing projects namely:

METROPOLITAN - (Park Merced Housing Project) which covers 11 - 13 Story Type 1-B Apartment Buildings containing 1683 housing units and estimated to cost \$24,048,442.00.

STONESTOWN - (Stoneson Bros. which covers 4 - 10 Story
Type 1-B Apartment Buildings containing 683 housing
units and estimated to cost \$5,352,000.00.

Comparative Statement of Permits Issued

	Permits		
	1948-49	1947-48	1946-47
Buildings	7,767	8,887	7,311
Billboards	234	443	378
Boiler Installations	213	230	272
Boiler Inspections	684	1,099	7
House Moving	105	62	47
Demolitions	113	69	62
Flue Registrations	47	54	46
Flue Permits - New Buildings	46	42	26
Flue Permits - Old Buildings	107	104	67
Flue Coupon Books - New Buildings	84	119	97
Flue Coupon Books - Old Buildings	22	17	23
Construct Sidewalks	43	35	29
Street Space	1,262	1,588	1,345
Excavations	1,037	1,154	882
Side Sewers	934	1,078	946
Excess Costs - Side Sewers	269	313	217
Sidewalk Flower Markets	37	40	40
Blasting	7	7	5
Advertising	17	33	18
House Number Certificates	1,331	1,630	1,244
Payments for Surveys	61	45	60
Payments for Engineering Inspection	95	83	86
Payments for Street Improvement Bonds	31	-	12
Public Utilities Street Openings	8,171	7,452	7,179
Posting Notices	1,179	1,259	-
Total number of permits issued	23,896	25,843	20,399

Refunds made from Special and Trust Funds

	1948-49		1947-48		1946-47	
	Refunds	Amount	Refunds	Amount	Refunds	Amount
Special Permit Fund						
(St. space & sub-sidewalks)	1,807	\$ 71,410.00	1,065	\$ 40,265.00	1,070	\$ 39,227.00
House Moving Fund	74	7,400.00	47	4,700.00	44	4,400.00
Excavations	63	1,373.60	28	185.00	28	562.00
Side Sewers:						
Refunds to Depositors	988	37,408.94	970	36,041.64	974	36,082.76
Installation Costs						
credited to Gen. Fund		165,548.96		147,294.19		125,124.24
Deposits on Plans	1,521	26,435.00	893	20,150.00	1,046	16,600.00
Street Improvement Bonds					3	6,379.39
Total	4,453	\$309,576.50	3,003	\$248,635.83	3,165	\$228,375.39

Report of House Numbering Activities

	1948-1949		1947-1948		1946-1947	
	1948-1949		1947-1948		1946-1947	
House Numbers issued:						
Private Construction	2,650		3,542		2,804	
S. F. Housing Authority Projects	-		-		1,125	3,929
Investigations made						
and Complaints adjusted	1,950		920		945	
Changes in House Numbering ordered	291		135		160	
Inquiries from Banks, Title Insurance						
Companies, General Public, etc.						
answered	2,900		3,000		3,000	

Additional Non-Revenue Activities

	1948-1949		1947-1948		1946-1947	
	1948-1949		1947-1948		1946-1947	
Inquiries pertaining to age and class of buildings, and other information requiring reference to old applications on file	8,750		9,500		10,300	
Plans brought from the basement by request for reference purposes and photostating	1,325		1,200		900	

Cashier's Report

Source of Receipt

Street space permit deposits	\$ 32,380.00	
Sub-sidewalk permit deposits	280.00	
House moving permit deposits	6,300.00	
Side sewer permit deposits	172,757.90	
Deposits on plans	25,025.00	\$236,742.90

Excavation Permits

Special deposits	\$ 986.00	
Inspection fees		
for Excav. (Special Deposits)	78.00	
(Public Utility Corporations)	17,812.50	
(Lowering curbs, etc.)	3,466.50	22,343.00

Fees for:

Building permits	228,378.80	
Billboard permits	571.00	
Demolition permits	1,160.00	
Boiler installations	1,176.00	
Boiler inspections	3,374.50	
Use of street space	27,660.22	
House number certificates	5,258.00	
House moving permits	2,660.00	
Flue registrations	940.00	
Flues - new buildings	23.00	
Flues - old buildings	214.00	
Flues - new buildings (coupons)	1,050.00	
Flues - old buildings (coupons)	440.00	
Posting notices	3,542.25	276,447.77

Sidewalk flower markets - fees	1,248.00
Side sewers - excess costs	5,437.70
Advertising charges	2,612.54
Payments on Street Improvement Bonds	-
Payments on Street Improvement Bonds (Ord. of 1934)	3,114.89
Inspection - fees	22,200.00
Surveys - fees	13,810.00
Misc. (See Monthly Reports for itemized detail)	5,879,418.68

Total receipts \$6,463,375.48

Note: 43 Sidewalk permits issued
No fees charged

Deposits with City and County Treasurer
Classified by Funds

General Fund

Street space and sub-sidewalks	\$ 32,660.00	
House moving	6,300.00	
Side sewer deposits	172,757.90	
Deposits on plans	25,025.00	\$236,742.90
Surveys	\$ 13,810.00	
Inspections	22,200.00	36,010.00
Excavations:		
Deposits	\$ 986.00	
Fees	21,357.00	22,343.00
Advertising		2,612.54
Side sewers - excess costs		5,437.70
Fees -		
Building permits	\$ 228,378.80	
Billboards	571.00	
Demolitions	1,160.00	
Street space	27,660.22	
House numbers	5,258.00	
House moving	2,660.00	
Boiler installations	1,176.00	
Boiler inspections	3,374.50	
Flue registrations	940.00	
Flues - new buildings	23.00	
Flues - old buildings	214.00	
Flues - new buildings (coupons)	1,050.00	
Flues - old buildings (coupons)	440.00	
Posting notices	3,542.25	276,447.77
Sidewalk flower markets - fees		1,248.00
Street Improvement Fund		
Street Improvement Fund (Ord. of 1934)		3,114.89

Miscellaneous Funds

General Fund	\$ 10,788.13	
Spec. Road Improvement Fund	2,144,584.29	
State Highway Trust Fund	109,291.71	
Spec. Gas Tax Street Improvement Fund	3,119,441.23	
1944 Sewer Bond Fund	475,280.88	
School Funds	32.44	
1947 Street Improvement Bond Fund	20,000.00	5,879,418.68

Total Deposits with City and County Treasurer \$6,463,375.48

Classification of Building Permits Issued

Class or Type	No. of Permits	Estimated Cost	Fees
1-A	8	\$ 4,456,000	
1-B	34	32,096,269	
2	32	2,682,775	
3	40	3,013,725	
4	1,811	23,418,212	
5	5,842	12,108,622	
Alterations			
Totals	7,767	\$77,775,603	\$228,378.80
Billboards	234	26,440	571.00
Totals	8,001	\$77,802,043	\$228,949.80

(Total number of building applications received - - 9,045)

Flue Registrations and Permits

Flue Registrations	47	\$ 940.00
*Coupon Books-new buildings	84	1,050.00
**Coupon Books-old buildings	22	440.00
Flue Permits - new buildings	46	23.00
Flue Permits - old buildings	107	214.00
Totals	306	\$ 2,667.00

Miscellaneous Permits

To raze structures	113	\$ 1,160.00
To move buildings	105	2,660.00
Boiler installations	213	1,176.00
Boiler inspection requests	684	3,374.50
Posting notices	1,179	3,542.25
Totals	2,294	\$ 11,912.75

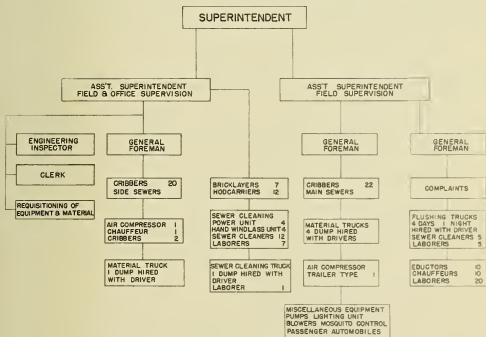
GRAND TOTALS 10,601 \$243,529.55

*New coupon books contain
25 prepaid coupons.

**Old coupon books contain
10 prepaid coupons

ORGANIZATION CHART

BUREAU OF SEWER REPAIR
DEPARTMENT OF PUBLIC WORKS
CITY & COUNTY OF SAN FRANCISCO



BUREAU OF ACCOUNTS
F. W. McKenzie, Supervisor

FUNCTIONS

The Bureau of Accounts controls the budgetary and financial activities of the Department. It is the point of origin of documents dealing with the disbursement of funds, and their guidance through required procedures until final liquidation.

The operating functions of the Bureau embrace control of payroll procedure, personnel records and field-timekeeping; purchase order requisitions, sub-storeroom and inventories; automotive expenditures and gasoline and tire records; work order job costs and invoicing; side sewer job and refund accounts; State gas tax subventions; the cash revolving fund for the Department; the stores revolving fund; budget preparation and control, operations of the Corporation Yard telephone exchange; and the supplying of clerical service to all Bureaus of the Corporation Yard.

Reports to the Director of Public Works of operations in Building Repair, Sewers, Street Repair and Street Cleaning are prepared monthly by this Bureau from the records maintained in the Bureau.

Job costs pertaining to property of the City, damaged by outside causes and falling within the scope of the departments control are compiled and forwarded for collection.

PERSONNEL

The personnel of the Bureau as of June 30, 1949 consisting of 29 employees, was as follows:

- 1 Supervisor in charge of the Bureau
- 1 Head clerk
- 3 Bookkeepers
- 4 Senior clerks
- 12 General clerks
- 4 General clerk-stenographers
- 3 General clerk-typists
- 1 Telephone operator

ORGANIZATION

The Bureau has a central office in the City Hall and a division handling operating accounts at the Corporation Yard, where the greater number of employees are assigned.

The general functions of the Bureau include three well-defined subdivisions:

Payroll and Personnel with 2 senior clerks and 5 assistants.
Three field timekeepers check outside operations for payroll

verification and also act as paymasters on semi-monthly paydays, delivering pay warrants to employees on the job. Purchasing and Stores with 1 senior clerk and 2 assistants. Gas Tax Subventions with 1 senior clerk and 3 assistants.

The activities of this Bureau have been greatly increased by the Collier-Burns Highway Act which trebles the moneys received from the State and requires more details in the reporting of expenditures and more implicit time regulations for the reports. The fiscal processing of contracts under Street, Sewer and School Bond programs has also greatly increased the work and will continue into subsequent years. To meet this situation and the degree of responsibility centering on this work, a move was successfully made to set up the City Hall Division, in the next fiscal year, under a Head Clerk rather than under a Senior Clerk.

OPERATIONS

The supplying of materials for the varied activities of the Department are handled by a sub-storeroom and a material yard.

The Stores Revolving Fund under the control of the Bureau was increased to \$70,000 during the year. It is designed to permit the purchase in advance of constantly-used materials. Plumbing supplies, electrical items, paints, hardware, lumber, glass, tools, sewer pipe, brick, cement, castings and miscellaneous needs which can be fore-seen are in stores and charged out to the various branches of the work as used. Controls have been established which facilitate monthly reimbursements for goods withdrawn, and stores' records are maintained on a perpetual inventory basis subject to annual physical check.

The Departmental Cash Revolving Fund of \$1,500.00 is used by the Bureau for payment of small bills and transportation charges, and enables workmen on jobbing operations to make cash purchases at neighborhood stores, thus avoiding trips to downtown establishments. All transactions are conducted under controls set up by Ordinance.

Detailed records are maintained of all expenditures, particularly of operations performed under work order procedure. In these, the Charter requires that all elements of indirect and supervisory costs be considered and made part of the final job cost. To accomplish this, indirect labor is pro-rated monthly on an exact percentage basis, as are overhead charges for accident compensation, sick leave, vacation, retirement, equipment replacement and miscellaneous. These items of overhead are accumulated in reserve to meet the requirements designated. Charges for small tools and shop supplies used in work order operations are placed against the miscellaneous reserve.

WORK DONE

The Bureau compiled and forwarded from job costs, bills in 98 cases in the amount of \$5,035.56, covering damages to structures under the control of the Department, such as bridges, automotive equipment, street structures, traffic signals, as well as prisoner damage to police stations; 948 permit deposits for side sewer installations and repairs on 1282 separate house connections were filed by property owners in the amount of \$170,237.77; 18,155 transactions were handled involving the delivery of materials from the sub-storeroom to the jobs; and 4896 requisitions and 5168 delivery orders were issued to vendors.

STATISTICAL DATA

Budgeted funds subject to control and appropriated to:

Bureau of Accounts	\$ 55,459.00
Bureau of Architecture	288,608.00
Bureau of Building Inspection	157,030.00
Bureau of Building Repair	724,040.00
Central Permit Bureau	30,629.00
Bureau of Engineering	559,084.00
Sewage Desposal Plant	134,799.00
Sewage Pumping Stations	51,695.00
General Office	79,347.00
Bureau of Sewer Repair	598,668.00
Bureau of Streets -	
Street Repair	706,166.00
Street Cleaning	1,280,594.00
Bridges	110,286.00
Gas Tax (Special Road Improvement)	1,329,429.00
Special Gas Tax-Street Improvement Fund	2,283,000.00
Gas Tax - Street Construction	767,000.00
Sub Total	\$ 9,155,834.00

Interdepartmental service under work order procedure for the following divisions of the City government:

Schools	1,805,009.37
Health	187,177.52
Recreation	53,249.38
Library	58,707.67
Public Building Improvements	82,928.94
Gas Tax Accounts	1,589,624.72
Engineering	11,239.89
Sewage Plants	5,820.00
Public Utilities	111,906.56
General Office	692,216.20
Sewer Bonds	379,860.00
Street Bonds	579,818.92
Public Welfare	6,965.39
Fire Department	451,834.42
Special Inspection	20,190.92
Park	25,831.00
State Highway Cleaning	30,970.00
Miscellaneous	405,423.22
Sub Total	6,498,774.12

Side sewer installations and repair expenditures: 170,237.77

TOTAL transactions for the year \$15,824,845.89

APPENDIX I
BUREAU OF ENGINEERING

CURRENT CONTRACT DATA - SUMMARY

Showing all Contract Work Awarded or Under Way
July 1, 1948 to June 30, 1949

Table	Type of Construction	No.	Contracts Awarded 1948-1949 Aggregate value	Amount expended during fiscal year 1948-1949
A	Major Thoroughfares	1	\$ 45,036.06	\$ 407,802.56
B-1	Streets, Private Contracts	35	318,975.00	407,202.00
B-2	Streets, Assessment Proceedings	26	342,944.35	218,241.90
B-3	Streets, Public Con- tracts, City Pay	10	158,457.18	355,924.94
B-4	Street Car Track Removal	13	2,089,620.01	2,538,297.12
C	Traffic Signals and Channelization	12	224,434.22	225,576.59
D-1	Sewers, Pipe, Vitri- fied Clay & Concrete	20	587,499.63	605,204.38
D-2	Sewers, Concrete (Monolithic)	3	2,241,855.85	1,155,973.85
E	Miscellaneous	24	9,700,163.58	1,417,309.86
TOTALS Awarded and Expended		144	\$15,708,985.88	\$7,331,263.20

TABLES

On the following pages appear separate tables of current contracts for each of the types of Construction listed above. The last column of each table, headed "Fund," denotes the source of the funds used to finance each project according to the following:

Abbreviation Legend

Designation	Description of Fund
General	General Fund City and County
Spec. Rd.	Special Road Improvement Fund
Pr. Co. Rds.	Primary County Road Fund
1st 1/4¢	One-quarter Cent Gas Tax for expenditures on State Highways within the City
Assmt.	Assessed to property benefiting under the Street Improvement Ordinance of 1934
Pd. Prop. Owners	Costs borne by Property Owners under private contract.
1944 Sewer Bonds	Bond Issue voted by citizens on November 7, 1944 - \$12,000,000
1947 St. Imp. Bonds	Bond Issue voted by citizens on November 4, 1947 - \$22,850,000

CURRENT CONTRACT DATA				1948-1949	Fund
Description & Contractor	Awarded	Completed Date	% Completed	Contract Amount	
A - MAJOR THOROUGHFARES					
Geary St. bet. Broderick St. & Presidio Ave. Geary Blvd. bet. Presidio & Masonic Aves. (Grading, paving, sewers, track relocation) C. L. Harney Inc	7/16/47	12/22/48	100	\$300,557.63	Pr. Co. Rds. Muni. Ry.
Army St. widening bet. Harrison St. & So. Van Ness Ave. (Grading, sewers, curbs and paving) C.L. Harney Inc.	5/28/48	2/7/49	100	137,346.50	Pr. Co. Rds. Spec. Rd.
Gough St. Extension bet. Market & Otis Sts. (new street)(curbs-sewer pavement) Eaton & Smith	12/22/48	5/27/49	100	45,036.06	1947 St. Imp. Bonds
Totals awarded & expended during fiscal year				\$ 45,036.06	\$407,802.56
B-1 - STREETS - Private Contractors					
*27th St. bet. Diamond & Castro Sts. (Sewer, curbs, paving) C.L. Harney Inc.	1/9/48	4/19/49	100	10,200.00	Pd. Prop. Owners
Rhode Island St. bet. Alameda & 15th Sts. (Curbs, paving, sewer in crossing) Fay Improv. Co.	1/21/48	11/1/48	100	9,000.00	•
*Amherst St. (portions) bet. Silver Ave. & Silliman St. (Sewer, Curbs, paving) Fay Improv. Co.	1/23/48	6/16/49	100	4,600.00	•
					3,200.00

Description & Contractor	CURRENT CONTRACT DATA			1948-1949		Fund
	Awarded	Completed Date	%	Contract Amount	Amount Expended 1948-1949	
*Jennings St. (portions) bet. Egbert & Fitzgerald Aves. (Curbs, paving)	Eaton & Smith	3/12/48	11/17/48	100	\$ 2,500.00	\$ 1,250.00
Montana St. bet. Plymouth Ave. & Summit St. (Sewer, curbs, paving)	Eaton & Smith	3/26/48	11/15/48	100	15,000.00	10,5000.0
Anherst St. from Wayland St. to proposed Bacon St. Princeton St. from Wayland St. to a line 400 feet north of proposed Bacon St. Bacon St. bet. University & Anherst Sts. (Grading, sewers, curbs, paving)	Eaton & Smith	4/7/48	11/1/48	100	45,000.00	31,500.00
*Yorba St. (portions) bet. 40th Ave. & w'y. termination (Curbs, paving)	C.L. Harney Inc.	4/16/48	1/31/48	100	2,900.00	2,320.00
Alameda St. bet. Rhode Island & De Haro Sts. (Curbs, paving)	Fay Improv. Co.	4/28/48	7/12/48	100	3,740.00	3,740.00
Lake Shore Subdivision #3 (Streets within) (Sewers, curbs, paving)	C.L. Harney Inc.	4/28/48	1/31/49	100	165,000.00	115,500.00
Delta St. bet. Teddy & Raymond Aves. (Sewers, curbs, paving)	Eaton & Smith	5/5/48	7/30/48	100	6,200.00	3,100.00
Bemis St. bet. Miguel St. & 80 ft. sw'y (sewer)	Standard Bldg. Co.	5/5/48	7/20/48	100	500.00	500.00

Pd. Prop.
Owners

CURRENT CONTRACT DATA 1948-1949

Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund
B-1 - STREETS - Private Contracts (Cont'd)						
Quenseda St. bet. Industrial & Selby Sts. (curbs, paving) Fay Improvement Co.	5/14/48	10/29/48	100	\$ 500.00	\$ 500.00	Pd. Prop. Owners
Apparel Heights Subdivision (Grading, sewers, curbs, paving) Eaton & Smith	6/23/48	6/30/49	100	40,000.00	40,000.00	"
Pacheco St. Aves. (Grading, sewers, curbs, paving) C.L. Harney Inc.	6/25/48	1/4/49	100	5,500.00	5,500.00	"
**Keith St. (SE½) bet. Arm- strong & Carroll Aves. includ- ing intersection of Keith & Bancroft Aves. (Curbs & Pave- ment) Fay Improvement Co.	7/16/48	1/11/49	100	4,100.00	4,100.00	"
Fratesa Court at S'ly termination of Girard St. (Sewer) E. J. Treacy	7/23/48	9/10/48	100	1,000.00	1,000.00	"
Pacheco St. (Portions) bet. 28th & 29th Aves. (Sewers, curbs, paving) Eaton & Smith	8/27/48	2/19/49	100	4,500.00	4,500.00	"
*Brussels St. bet. Ordway & Ward Sts. (Curbs, Paving) Eaton & Smith	10/1/48	4/20/49	100	6,700.00	6,700.00	"
*Duncan St. bet. Douglass & Diamond Sts. (Sewers, curbs, paving) Bernal Const. Co.	10/8/48	5/24/49	100	10,600.00	10,600.00	"
Fairfax Ave bet. 3d & Phelps Sts. (Sewers, curbs, paving) Fay Improvement Co.	10/15/48		70	6,200.00	4,340.00	"

CURRENT CONTRACT DATA				1948-1949	Fund
Description & Contractor	Awarded Date	Completed	Contract Amount	Amount Expended 1948-1949	
		Date %			
B-1 - STREETS - Private Contracts (Cont'd)					
Thrift St. from Orizaba Ave E'ly to existing pavement (Sewers, curbs, paving) Eaton & Smith	10/22/48	4/12/49	100	\$ 7,200.00	\$ 7,200.00
Kronquist Court from 27th St. to N'ly termination (Sewers, curbs, paving) C. L. Harney Inc.	10/22/48	4/19/49	100	7,250.00	7,250.00
Townsend St. (N/S) bet. 5th & 6th St. (Catch-basin culvert) Southern Pacific Co.	10/27/48	3/8/49	100	600.00	600.00
***University St. (W $\frac{1}{2}$) from 460 ft. south of Felton st. to Wayland St. (Sewers, curbs, paving) Eaton & Smith	11/5/48		30	9,100.00	2,730.00
Wayland St. bet. Yale & Amherst Sts. (Curbs & paving) Eaton & Smith	11/5/48	2/3/49	100	9,300.00	9,300.00
Silliman St. bet. Yale & Am- herst Sts. (Sewers, curbs, paving)	11/12/48		70	5,600.00	3,920.00
Greenwich St. (S'ly side) bet. 24 & 97, W. of Montgomery St. (Sewer) Fay Improvement Co.	11/24/48	2/8/49	100	2,100.00	2,100.00
Sloat Blvd. from 185 ft. M/L east of 41st Ave. to 101 feet. W/L westerly from 43d Ave. (Curbs) Standard Bldg. Co.	11/24/48	1/12/49	100	1,200.00	1,200.00
*Goettingen St. (Portions) from Olmstead St. to 300; N'ly (Sew- ers, curbs, paving) Fay Imp. Co.	12/3/48		30	6,200.00	1,860.00

Description & Contractor	CURRENT CONTRACT DATA			1948-1949		Fund
	Awarded	Completed Date	%	Contract Amount	Amount Expended 1948-1949	
B-1 - STREETS - Private Contracts (Cont'd)						
16th St. bet. Rhode Island & 7th Sts. (Paving) Fay Improvement Co.	5/12/48	12/14/48	100	\$ 26,500.00	\$ 26,500.00	Pd. Prop.
*34th Ave. (E½) bet. Pacheco & Quintara Sts. (Sewers, curbs, paving) C. L. Harney Inc.	12/17/48	6/14/49	100	6,600.00	6,600.00	"
*Quintara St. (S½) bet. 34th & 35th Aves. (Curbs, paving) C. L. Harney Inc.	12/17/48		30	2,500.00	750.00	"
*Egbert Ave. (portions) bet. Keith & Jennings St. (Sewers, curbs, paving) Fay Improvement Co.	12/24/48		30	9,700.00	2,910.00	"
*Athens St. (portions) bet. Peru Ave. & Madison St. (Curbs, paving) Eaton & Smith	12/24/48		40	11,500.00	4,600.00	"
Block 2681 (Sewer in ease- ment) Fay Improvement Co.	1/26/49	3/1/49	100	950.00	950.00	"
Silliman St. (S'ly ½) bet. Princeton & 60 ft. E. (Curbs, paving) Fay Improvement Co.	6/25/49		55	675.00	382.00	"
Block 2499-A (Sewer in ease- ment) Standard Bldg. Co.	2/25/49	3/19/49	100	1,500.00	1,500.00	"
Goettingen St. (portions) bet. Woolsey & Dwight Sts. (Grading, curbs, paving) Eaton & Smith	3/9/49		40	6,700.00	2,680.00	"

CURRENT CONTRACT DATA 1948-1949

Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1948-1949	Fund
B-1 - STREETS - Private Contracts (Cont'd)						
Newhall St. (portions) bet. Palou & Revere Aves. (Sewers, curbs, paving) Eaton & Smith	3/9/49		50	\$ 9,200.00	\$ 4,600.00	Pd. Prop. Owners
Quintara St. bet. 33d & 34th Aves. (Curbs, paving) Chas. L. Harney	3/9/49		30	5,000.00	1,500.00	"
Avalon Ave. bet. Knox & Moscow St. Moscow St. bet. Avalon & Excelsior Sts. including in- tersections. (Sewers, curbs, paving) Fay Improvement Co.	3/9/49		38	38,000.00	14,200.00	"
*Palou Ave. (portions) bet. Industrial & Selby Sts. (Sew- ers, curbs, paving) Fay Improvement Co.	4/20/49		30	2,300.00	690.00	"
Crocker-Amazon Subdivision No. 2 (Streets within) (Sewers, curbs, paving) C. L. Harney Inc.	4/20/49		70	56,800.00	39,760.00	"
Pine & Montgomery St. (Reconstruction of Manhole) Pac. Tel. & Tel.	5/11/49	5/19/49	100	500.00	500.00	"
*Bemis St. (portions) bet. Castro & Roanoke Sts. (Curbs, paving) Bernal Const. Co.	5/27/49		30	7,000.00	2,100.00	"
Gambier St. bet. Felton & Burrows Sts. (Sewers, curbs, paving) Fay Improvement Co.	5/27/49		25	9,000.00	2,250.00	"
*Noriega St. (S½) bet. 60' W of 48th Ave. & Great High- way. (Curbs, paving) Chas. L. Harney Inc.	6/1/49		0	1,900.00		

CURRENT CONTRACT DATA 1948-1949				
Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1948-1949
B-1 - STREETS - Private Contractor(Cont'd)				
Ina Court bet. LaGrande & Excelisior Aves. LaGrande Ave. bet. Ina Court & Avalon Ave. (Sewers, curbs, paving)	6/1/49	0	\$ 21,000.00	
Winston Drive (as shown on Plan 8242 Street Improvements for Stonestown) 19th Ave. (W) ly side bet. 20th & Winston Dr. Stonestown Dev. Corp.	6/22/49	0	20,000.00	
Totals awarded and expended during fiscal year			\$318,975.00	\$407,202.00

Pd. Prop Owners

*Remaining portions of street improved under assessment proceedings.

**Remainder improved under Public Contract - City Pay

APPENDIX I

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Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1948-1949	Fund
B-2 STREETS - Assessment Proceedings						
*27th St. (Portion) bet. Diamond & Castro Sts. (Curbs, paving) C.L. Harney Inc.	1/9/48	4/17/49	100	\$ 4,359.00 (2,100.00-)	\$ 2,609.00	Assmt. Rd. Spec. Rd.
Cambridge St. bet. Silver Ave. & Pioche Sts. (Curbs, paving) E. J. Freacy	1/16/48	5/17/48	100	2,631.80 (1,100.00-)	2,631.80	"
*Amherst St. (E½) bet. Sil- liman St. & 60th North (Curbs, paving) Fay Improvement Co.	1/23/48	6/16/49	100	879.00	614.00	Assmt.
*Jennings St. (SE½) bet. Egbert Ave. & 100th SW. (Curbs, paving) Eaton & Smith	3/12/48	11/7/48	100	813.00 (300.00-)	413.00	Assmt. Rd. Spec. Rd.
Hanover St. (Sly. ½) bet. Prague St. & 126th Wly; Cros- sing of Hanover & Allison Sts. Intersections of Han- over, Pope, Prague St. (Sewers, curbs, paving) Eaton & Smith	4/16/48	10/4/48	100	5,746.00 (1,500.00-)	3,446.00	"
*Yorba St. bet. 40th Ave. & Wly; Termination (Curbs Inc. paving) C. L. Harney Inc.	4/16/48	1/31/49	100	1,439.80 (600.00-)	1,139.80	"
Arkansas St. from 23d St. north to existing pavement (Sewers, curbs, paving) Fay Improvement Co.	5/14/48	12/3/48	100	8,517.75 (2,500.00-)	8,517.75	"
LeRoy Place bet. Sacramento St. & Sly. Termination, (Sewers, curbs, paving) A. Walgren	6/9/48 -----	1/27/49	100	4,408.00 (1,500.00-)	4,408.00	"
Yale St. bet. Silver Ave. & Silliman St. (Curbs, paving) Fay Improvement Co.	7/2/48	10/11/48	100	6,299.55 (700.00-)	6,299.55	"

CURRENT CONTRACT DATA					1948-1949	
Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund	
B-2 STREETS - Assessment Proceedings (Cont'd)						
Phelps St. bet. 3d St. & Fairfax Avenue including crossings of Davidson & Fairfax Aves. Evans Ave. bet. 3d St. & 70 th W. ly. (Sewers, curbs, paving) C. L. Harney Inc.	10/8/48	4/28/49	100	\$29,749.50 { 1,200.00- } { 4,200.00- } { 8,900.00- }	Assmt. Rd. Spec. Pr. Co. Rd. Sewer Bonds \$29,749.50	
*Pacheco St. (portions) bet. 38th & 39th Aves. (Curbs, paving) Eaton & Smith	8/27/48	2/18/49	100	(2,580.70 (1,300.00-)	Assmt. Rd. Spec. Rd. 2,580.70	
*Duncan St. (portions) bet. Douglass & Diamond Sts. (Curbs, paving) Bernal Const. Co.	10/8/48	5/24/49	100	(6,377.30 (3,500.00-)	" 6,377.30	
Mullen Ave. bet. Franconia St. & Peralta Ave. (Curbs, paving) Eaton & Smith	9/24/48	5/10/49	100	(7,476.50 (3,100.00-)	" 7,476.50	
*Brussels St. (portions) bet. Ordway & Ward Sts. (Curbs, paving) Eaton & Smith	10/1/48	4/20/49	100	(1,612.00 (1,300.00-)	" 1,612.00	
Quintara St. bet. 38th Ave. (E line) & 39th Ave. (Sewer) C. L. Harney Inc.	10/8/48	2/3/49	100	(2,754.00 (1,500.00-)	" 2,754.00	
*Silliman St. bet. Amherst & Princeton Sts. Crossings of Silliman St. with Amherst & Princeton Sts. (Sewers, curbs, paving) Fay Improvement Co.	11/28/48		50	(12,827.47 (4,000.00-)	" 6,414.00	
Ogden St. bet. Ellsworth & Gates St. (Curbs & paving) Eaton & Smith	12/3/48		40	(3,350.00 (2,000.00-)	" 1,340.00	

CURRENT CONTRACT DATA 1948-1949

Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund
B-2 STREETS - Assessment Proceedings (Cont'd)					
Masonic Ave. bet. Geary Blvd. Nly to existing pavement (Sewers, curbs, paving, lighting system)	C. L. Harney Inc.	11/10/48			
		98	\$35,440.85 (11,080.00-)	\$34,733.00	Assmt. Pr. Co. Rd.
Goettingen St. (E½) bet 200' & 300' N. of Olmstead St. (Curbs, paving)	Fay Improvement Co.	12/3/48			
		30	1,381.00 (300.00-)	414.00	Assmt. Spec. Rd.
*Egbert Ave. bet. Keith & Jennings Sts. (Curbs, paving)	Fay Improvement Co.	12/17/48			
		30	4,899.90 (1,200.00-)	1,470.00	"
University St. bet. Silliman St. & 460' S. of Felton St. (Sewers, curbs, paving)	Eaton & Smith	12/10/48			
		30	22,553.85	6,766.00	Assmt.
*Athens St. bet. Peru Ave. & Madison St. (Curbs, paving)	Eaton & Smith	12/24/48			
		40	4,789.00 (3,050.00-)	1,916.00	Assmt. Spec. Rd.
Brussels St. crossings of Ordway & Ward Sts. (Sewers, curbs, paving)	C. L. Harney Inc.	11/5/48			
		80	5,639.50 (700.00-)	4,512.00	"
Anza St. bet. Masonic & Parker Aves. (Widening) (Grading, sewers, curbs, paving)	Eaton & Smith	3/2/49			
		42	110,744.25 (88,450.00-) (26,500.00-)	46,512.00	Assmt. Pr. Co. Rds. Sewer Bonds
Egbert Ave. bet. 3d & Keith Sts. Crossings of Egbert Ave. at Keith & Jennings Sts.	C. L. Harney Inc.	1/21/49			
		30	8,645.80 (1,200.00-)	2,594.00	Assmt. Spec. Rd.

CURRENT CONTRACT DATA 1948-1949					Amount Expended 1948-1949	Fund
Description & Contractor	Awarded	Completed	Contract Amount			
		Date		%		
B-2 STREETS - Assessment Proceedings (Cont'd)						
Quintara St. bet. 26th & 28th Aves. Crossing of Quintara & 28th Ave. (Sewers, curbs pav- ing) Fay Improvement Co.	3/9/49		50	\$21,663.08 (6,000.00)	\$10,831.00	Assmt. Rd. Spec.
Quintara & 34th Ave. (Cros- sing) (Curbs, paving) C. L. Harney	3/4/49		40	3,568.50	1,427.00	Assmt.
*Goettingen St. (portions) bet. Woolsey & Dwight Sts. (Curbs, paving) Eaton & Smith	3/9/49		40	3,875.60 (2,220.00-)	1,550.00	Assmt. Rd. Spec.
*Newhall St. (portions) bet. Quesada & Revere Aves. (curbs, paving) Eaton & Smith	3/9/49		50	4,600.00 (2,600.00)	2,300.00	"
20th St. bet. Rhode Island & DeHaro Sts. (Sewers, curbs, paving) C. L. Harney Inc.	3/9/49		60	8,167.00 (3,600.00)	4,900.00	"
Orizaba Ave. bet. Sargent & Shields Sts. Intersections of Sargent, Montana & Thrift Sts. (Sewers, curbs, paving) C. L. Harney Inc.	4/15/49		20	23,814.10 (14,700.00-)	4,763.00	"
Elmira St. bet. Industrial St. & 516 th St. (Sewer) Fay Improvement Co.	3/11/49	5/17/49	100	3,044.00 (400.00-)	3,044.00	"
Palou Ave. (NE½) bet. Indust- rial & Selby St. (Curbs, pav- ing) Fay Improvement Co.	4/15/49		30	1,493.10 (600.00-)	448.00	"

CURRENT CONTRACT DATA 1948-1949

Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund
B-2 STREETS - Assessments Proceedings (Cont'd)					
Burrows St. bet. Gambier & Cambridge Sts. Including crossings of Gambier, Harvard, Oxford & Cambridge Sts. (Sewers) E. J. Treacy	5/6/49	30	\$ 5,597.80 { 100.00.-)	\$ 1,679.00	Assmt. Rd. Spec. Rd.
Totals awarded and expended during fiscal year			\$342,944.35	\$218,241.90	

*Remaining portions of street improved under private contract.

- Amount paid by City - Balance paid by Property Owners.

Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund
B-3 STREETS - Public Contracts - City Pay					
Clara St. bet. 4th & 6th Sts. Shipley St. bet. 4th & 6th Sts.; Falmouth St. bet. Folsom & Shipley Sts.; Clementine St. from 6th St. 380' E. ly Russ St. bet. Howard & Folsom Sts.; Moss St. bet. Bryant St. & 345' S. ly. (Raise to grade sewers, curbs, paving) C. L. Harney Inc.	5/7/48	11/30/48 100	\$175,746.63	\$175,746.63	General Spec. Rd.
16th St bet. 7th & Rhode Island Sts. (Reconstruct pavement) Fay Improvement Co.	5/12/48	11/29/48 100	27,174.63	27,174.63	"

CURRENT CONTRACT DATA				1948-1949	Amount Expended 1948-1949	Fund
Description & Contractor	Awarded	Completed Date	%	Contract Amount		
B-3 STREETS - Public Contracts - City Pay (Cont'd)						
Pacheco St. (S½) bet 34th & 36th Aves. C. L. Harney Inc.	6/25/48	1/4/49	100	\$ 6,998.00	\$ 6,998.00	Spec. Rd.
Portola Dr. bet Teresita Blvd. & St. Francis Circle; Vicente St. bet. West Portal Ave. & 19th Ave. (Resurfacing) Pay Improvement Co.	7/14/48	9/14/48	100	27,755.31	27,755.31	"
North Point St. (N½) bet. Jackson & Taylor Sts. (Widen- ing) Eaton & Smith	7/14/48	11/8/48	100	3,836.50	3,836.50	"
Keith St. (NW½) bet. Arm- strong & Carroll Aves. (Curbs, & pavement)	7/16/48	1/11/49	100	3,549.80	3,549.80	"
Howard St. bet. 7th & 100' W'y. (Reconstruction) C. L. Harney Inc.	8/25/48	12/3/48	100	6,179.97	6,179.97	Pr. Co. Rds.
Columbia Square bet. Folsom & Harrison Sts.; Dore St. bet. Bryant & Brannan Sts.; Erie St. bet. Mission & Folsom Sts. Trainer St. bet. 13th & 14th Sts. (Raise to grade, sewers, curbs, pavement) C. L. Harney Inc.	9/15/48	4/30/49	100	63,884.83	63,884.83	General Spec. Rd.
Army St. bet. Vermont & Ten- nessee Sts.; Evans Ave. bet. Army & Phelps Sts. (Resur- facing) C. L. Harney Inc.	10/1/48	11/22/48	100	22,633.27	22,633.27	Pr. Co. Rds.
University St. (E½) bet. 460' S. of Felton St. & S. Line of Wayland St. (Curbs & paving) Eaton & Smith	11 5/48		30	9,610.00	2,880.00	Spec. Rd.

CURRENT CONTRACT DATA 1948-1949

Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1948-1949	Fund
B-3 STREETS - Public Contracts - City Pay (Cont'd)						
Wayland St. (S½) (portions) bet. Yale & University Sts. (Curbs, paving) Eaton & Smith	11/5/48	2/3/49	100	\$ 7,941.00	\$ 7,941.00	Spec. Rd.
34th Ave. (W½) bet. Pacheco & Quintara Sts.; Quintara St. (N½) bet. 34th & 35th Aves. (Curbs & paving) C. L. Harney Inc.	12/17/48		50	11,441.50	5,720.00	"
Sloat Blvd. (N½) bet. 41st & 42d Aves. (Reconstruct- ion) Eaton & Smith	11/12/48	12/30/48	100	1,625.00	1,625.00	"
Totals awarded and expended during fiscal year				\$158,457.18	\$355,924.94	
B-4 STREET CAR TRACK REMOVAL						
Folsom St. bet. 3d & Steuart Sts.; Steuart St. bet. Howard & Folsom Sts.; Howard St. bet. Steuart St. & Embarcadero; Embarcadero bet. Howard St. & Underpass. (Remove street car tracks, & repair) M. J. Lynch	3/17/48	7/7/48	100	71,424.17	12,857.00	1947 St. Imp. Bonds
Sacramento St. bet. Embarca- dadero & Van Ness Ave.; Larkin St. bet. Sacramento & Clay Sts. (Remove cable car tracks & repave) Fay Improvement Co.	4/14/48	9/15/48	100	92,841.95	51,000.00	"
Kearny St. bet. Geary St. & Broadway (Remove street car tracks & repave) Eaton & Smith	5/5/48	7/24/48	100	96,184.33	52,500.00	"

CURRENT CONTRACT DATA 1948-1949

Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund
B-4 STREET CAR TRACK REMOVAL (Cont'd)						
Polk St. bet. Post & N. Point Sts. (Remove street car tracks & repave) Eaton & Smith	6/2/48	8/27/48	100	\$156,039.56	\$156,039.56	1947 St. Imp. Bonds
McAllister St. bet. Market St. & Central Ave.; Fulton St. bet. Masonic Ave. & Stanyan St. (Remove street car tracks & repave) Lowrie Paving Co.	6/25/48	12/22/48	100	244,985.05	244,985.05	"
16th St. bet. Church & Kansas Sts.; Kansas St. bet. 16th & 17th Sts.; 17th St. bet. Kansas & Connecticut Sts.; Connecti- cut St. bet. 17th & 18th Sts.; 18th St. bet. Connecticut & 3d Sts. (Remove st. car tracks & repave) C. L. Harney Inc.	7/28/48	1/24/49	100	208,306.55	208,306.55	"
Fillmore St. bet. Duboce Ave. & Broadway; Church St. bet. Market St. & Duboce Ave. (Remove street car tracks & repave) C. L. Harney Inc.	8/13/48	6/12/49	100	249,275.00	249,275.00	"
20th Ave. bet. Lincoln Way & Wawona St.; Wawona St. bet. 19th & 20th Aves. (Remove street car tracks & repave) Fay Improvement Co.	9/1/48	12/28/48	100	176,371.59	176,371.59	"
Clay St. bet. Embarcadero & Larkin St.; Sacramento St. bet. Gough & Fillmore Sts.; (Remove street car tracks & repave) Fay Improvement Co.	9/10/48	4/22/49	100	175,960.65	175,960.65	"
Monterey Blvd. bet. Diamond & Gennessee Sts. (Remove st. car tracks & repave) Eaton & Smith	10/6/48	2/10/49	100	77,295.32	77,295.32	"

CURRENT CONTRACT DATA 1948-1949

Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1948-1949	Fund
B-4 STREET CAR TRACK REMOVAL (Cont'd)						
Fulton St. bet. Stanyan St. & LaPlaya (Remove street car tracks & repave) C. L. Harney Inc.	10/22/48	4/2/49	100	\$351,809.50	\$351,809.50	1947 St. Imp. Bonds
Haight St. bet. Market & Stanyan Sts. (Remove street car tracks & repave.) C. L. Harney Inc.	12/8/48	6/1/49	100	178,978.72	178,978.72	"
6th St. bet. Mission & Bryant Sts. (Remove street car tracks & repave) Eaton & Smith	2/9/49	5/11/49	100	44,415.59	44,415.59	"
Hayes St. bet. Market & Stanyan Sts.; Stanyan St. bet. Hayes & Fulton Sts.; Polk St. bet. Hayes & Fell Sts. (Remove street car tracks & repave) Eaton & Smith	12/29/48	6/24/49	100	208,374.00	208,374.00	"
The Embarcadero bet. Ferry Bldg. & Jackson St.; Washington St. bet. Embarcadero & Kearny St.; Jackson bet. Embarcadero & Drumm St.; Jackson St. bet. Battery St. & Columbus Ave.; Columbus Ave. bet. Montgomery & Stockton Sts. (Remove street car tracks & repave) Lowrie Paving Co.	2/11/49		93	96,110.00	89,380.00	"
Masonic Ave. & No. 6 Street Car Line (Remove street car tracks & repave) C. L. Harney Inc.	3/18/49	6/14/49	100	197,248.59	197,248.59	"

CURRENT CONTRACT DATA 1948-1949

Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund
B-4 STREET CAR TRACK REMOVAL (Cont'd)						
18th St. bet. Castro & Market Sts.; Market St. bet. 18th & Clayton Sts. (Remove tracks & reconstruct pavement) Fay Improvement Co.	4/20/49		98	\$ 57,202.50	\$ 56,000.00	1947 St. Imp. Bonds
Third St. bet. Channel & Mariposa Sts. (Remove tracks & reconstruct pavement) C. L. Harney Inc.	6/24/49		11	68,272.00	7,500.00	"
Totals awarded and expended during fiscal year				\$2,089,620.01	\$2,538,297.12	"

C - TRAFFIC SIGNALS & CHANNELIZATION

Third St. bet. Custer Ave. & Bayshore Blvd. (Traffic signal system) H. S. Tittle Co.	2/6/48	8/5/48	100	\$ 28,752.32	\$ 18,100.00	Pr. Co. Rds.
Van Ness Ave.; 10th St.; Potrero Ave.; State Highway Routes 2 & 68 (Traffic signal system) R. Flatland	2/13/48	1/4/49	100	91,804.75	78,000.00	1st 1/4 Pr. Co. Rds.
Third & 25th Sts. (instal- lation of traffic control system) Geo. F. Brayer	5/14/48	1/3/49	100	2,742.00	2,742.00	Pr. Co. Rds.
Portola Dr. at O'Shaughnessy Blvd. & Woodside Ave. and Laguna Honda Blvd. (Traffic signals) H. C. Reid Co.	6/4/48	10/1/48	100	7,030.55	7,030.55	"
Post St. at Polk & Larkin Sts. (Traffic signals) H.C. Reid Co.	6/4/48	11/9/48	100	6,828.82	6,828.82	"

CURRENT CONTRACT DATA 1948-1949

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Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund
C - TRAFFIC SIGNALS & CHANNELIZATION (Cont'd)						
Bay Shore Blvd., Alemany Blvd. & Industrial St. (Traffic signals) H. S. Tittle Co.	6/4/48	7/20/48	100	\$ 2,800.00	\$ 2,800.00	1st ½¢
Army St. at Rhode Island St. (Traffic signals) Abbott Electric Co.	6/23/48	9/27/48	100	1,167.00	1,167.00	Pr. Co. Rds.
California St. at Hyde St. (Traffic signals) Abbott Electric Co.	7/21/48	9/21/48	100	2,473.00	2,473.00	"
Gough, Franklin, Polk, Larkin Sts. (Traffic signals) Abbott Electric Co.	9/3/48	5/27/49	100	22,972.72	22,972.72	"
Market, Noe & 16th Sts. Traf- fic signals) Abbott Electric Co.	9/15/48	12/2/48	100	4,422.00	4,422.00	"
Third St. bet. 4th St. & Custer Ave. (Traffic signals) R. Flatland	1/12/49	6/7/49	100	21,802.50	21,802.50	"
Bush St. bet. Market St. & Presidio Ave. (Traffic signals) R. Flatland	1/28/49		45	70,680.00	31,800.00	"
Pine St. bet. Market St. & Presidio Ave. (Traffic signals) H. C. Reid & Co.	3/30/49		20	80,900.00	16,180.00	Bonds 1947
Army St. bet. Bryant & Harrison Sts. (Traffic signals) H. C. Reid & Co.	3/25/49	6/20/49	100	2,720.00	2,720.00	Pr. Co. Rds.
Ocean Ave. at San Jose Ave. (Traffic signals) H. C. Reid & Co.	3/30/49	6/16/49	100	2,145.00	2,145.00	Pr. Co. Rds.

CURRENT CONTRACT DATA 1948-1949					Fund
Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	
C - TRAFFIC SIGNALS & CHANNELIZATION (Cont'd)					
Mission St. at Virginia Ave. (Traffic signals) R. Flatland	5/11/49	6/30/49	100	\$ 2,500.00	\$ 2,500.00 Bonds 1947
Army St. & Evans Ave. (Traffic signals) R. Flatland	12/24/48	1/7/49	100	1,623.00	1,623.00 Pr.Co.Rds.
Market St. at Diamond & Eureka Sts. (Center islands & traffic signals) Abbott Electric Co.	6/29/49		0	11,106.00	Bonds 1947
Geary Blvd. at Masonic & Presidio Aves. (Traffic signals & islands) R. Flatland	6/15/49		0	1,090.00	"
Totals awarded and expended during fiscal year				\$224,434.22	\$225,306.59
D-1 SEWERS - PIPE - Vitrified & Concrete					
12th Ave & Quintara St. (18" V.C.P.)	Gabriel Const Col	5/7/48	11/8/48	100	\$ 6,183.75 \$ 6,183.75 Bonds 1944
Scott St. Sewer System Sec. E in Waller, Page, Scott, Fell Sts. bet. Steiner St. & 180th St. of Divisadero St. (6'-9", 5'-6", 4'-6", 4'-3", 2'-6" concrete pipe)					
M. J. Lynch				5/28/48	93 284,562 ----- 264,600.00
Lake St. Sewer System Sec. A in 17th Ave. & The Presidio bet. Lake St. & Pacific Ocean 7'-00" & 6'-6" (concrete pipe)					
M & K Corporation				8/6/48	4/26/49 100 237,978.28 237,978.28

CURRENT CONTRACT DATA 1948-1949

Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund
D-1 SEWERS - PIPE - Vitrified & Concrete (Cont'd)						
Townsend St. 5th & 6th Sts. (Catch basin & culvert) Southern Pacific	10/27/48	3/8/49	100	\$ 600.00	\$ 600.00	Pd. Prop. Owners
Greenwich St. bet. 24 ft. & 97, W. ly from Montgomery (Sewer) Fay Improv. Co.	11/24/48	2/8/49	100	2,100.00	2,100.00	"
Stonestown W. of 19th Ave, N. of State Teachers College (Sewer in easement) Stonestown Dev. Co.	12/8/48	5/13/49	100	30,000.00	30,000.00	"
Tompkins & Peralta Aves. (Intersection)(Sewer) Lowrie Paving Co.	12/8/48	12/9/49	100	1,000.00	1,000.00	"
San Marcos Ave. bet. lots 17A & 18 in Block 2861 (Sewer in easement) Fay Improv. Co.	1/26/49	3/1/49	100	950.00	950.00	"
Sloat Blvd., N. side, bet. 39th & 41st Aves. (Sewer) C. L. Harney Inc.	1/26/49	2/28/49	100	2,512.00	2,512.00	"
Connecticut St., 390 ft. N. of Army (Manhole, catchbasins, culvert) Eaton & Smith	1/26/49	3/15/49	100	800.00	800.00	"
Crestlake Dr. Blk. 2499-A (Sewer in easement) Standard Bldg. Co.	2/25/49	3/14/49	100	800.00	800.00	"
Lake Shore Park Subdivision No. 3 (Cast iron sewer force main) Eaton & Smith	12/10/48	1/7/49	100	12,000.00	12,000.00	"

CURRENT CONTRACT DATA 1948-1949

Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund
D-1 SEWERS - PIPE - Vitrified Clay & Concrete (Cont'd)						
Elmira St., from Helena St. 250 ft. N. ly. (Sewer) E. J. Treacy	3/11/49	5/17/49	100	\$ 2,600.00	\$ 2,600.00	Pd. Prop. Owners
Florida St., bet. 17th St. & Mariposa St. (Catch basin, manhole culvert) A. D. Schader	3/13/49	5/4/49	100	600.00	600.00	"
Ingliside Sewer Relocation in Winston Dr. Stonetown Sub- division McDonald, Young & Nelson	3/18/49	4/29/49	100	7,400.00	7,400.00	Bonds 1944
Osage Alley bet. 24th S. of 270 S. ly. (sewer) Fay Improv. Co.	3/18/49	5/16/49	100	3,890.35	3,890.35	General
Dolores St., bet. Army & 27th Sts. (Sewer) Rosenberg Bros. Const. Co.	4/15/49		85	1,981.00	1,685.00	"
Egbert Ave., bet Jennings St. & 300' W. ly. M. J. Treacy	4/8/49	5/23/49	100	1,725.00	1,725.00	"
Lake St., Sewer Sec. "B" bet. 17th & 8th Aves. 5'-6", 6'-0", 7'-0" 'C' Con. Pipe) C. L. Harney Inc.	3/23/49		2	253,863.00	5,080.00	Bonds 1944
North Point Main Sewer, Timber outlet structure. Martin Murphy	2/11/49	6/30/49	100	22,200.00	22,200.00	"
9th Ave., bet. Forest Hill Tract & 12th Ave. (Sewer) Central Cal. Const. Co.	6/3/49		0	4,000.00		Pd. Prop. Owners

CURRENT CONTRACT DATA 1948-1949

Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1948-1949	Fund
D-1 SEWERS - PIPE - Vitrified Clay & Concrete (Cont'd)						
8th St. bet. Market & Mission Sts. (Remove portion of sewer) Pac. Gas & Elect.	6/3/49	6/30/49	100	\$ 500.00	\$ 500.00	Pd. Prop. Owners
Totals awarded and expended during fiscal year				\$587,499.63	\$605,204.38	
D-2 SEWERS - CONCRETE (Monolithic)						
Alemamy Sewer Sec. "G" & Marin St. Sewer Outfall at Islais Creek (3-compartment 10'x7.5', 10'x7'0')	5/7/47	8/20/48	100	249,411.75	23,411.75	Bonds 1944
Healy Tibbetts Const. Co.						
20th St. bet. Alabama & York Sts.; Florida St. bet. 20th & 21st.; 21st bet. Florida & York Sts. (3'x4.5', 2.5'x3.75')	4/28/48	10/28/48	100	73,233.20	61,233.20	"
Martin Murphy						
Lake Merced Sewer System Sec. D bet.; Lake Merced Blvd. & Pacific Ocean 10'x11'-3" Concrete Sewer (part in tunnel)	8/6/48		66	1,290,819.00	852,000.00	"
Fredrickson-Watson, M & K Corp. Piombo Const. Co.						
Lake Merced Sewer System Sec. "C" across S. ly arm of Lake Merced (3 compartments each 6'-9"x6'-9" concrete sewer)	3/9/49		20	916,485.60	183,300.00	"
Fredrickson Watson Co. M.&K. Corp., Piombo Const. Co.						
Jackson St. bet. Montgomery & Sansome Sts. (4'x6')	4/13/49	6/22/49	100	34,551.25	36,028.90	"
L. Harney Inc.						
Totals awarded and expended during fiscal year				\$2,241,855.85	\$1155,973.85	

CURRENT CONTRACT DATA 1948-1949

E - MISCELLANEOUS

Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund
Richmond-Sunset Sewage Tr. Plant (Enlargement) Clinton Construction Co. and Anderson & Rowe	6/26/46	5/9/49	100	\$862,484.63	\$ 60,375.00	Bonds 1944
Street Sign Installation, 2d Contract (Western Addition, Richmond & Marina Districts) M. J. Lynch	5/5/48	11/2/48	100	19,722.20	15,942.20	General Spec. Rd.
Third St. Bridge at Channel (Repair fenders) Duncanson & Harrelson	5/28/48	7/28/48	100	1,649.00	1,649.00	Pr.Co.Rds.
Street Signs 3d Contract, new type (Purchaser Supplies) Ferro Enamelling Co.	6/10/48	7/10/48	100	6,103.88	6,103.88	General
264 Golden Gate Ave. (Dept. of Electricity) (Retaining Wall) Adam Arras and Son	6/30/48	10/13/48	100	4,422.00	4,422.00	General
Bridle Path, Lake Merced Blvd. bet. Alemany Blvd. Exten. & 2400' N. (Resurface) A. Walgren	6/25/48	9/29/48	100	3,456.00	3,456.00	Spec. Rd.
Pacheco St. bet. 40th & 41st Aves. (Remove Sand) C. L. Harney Inc.	6/23/48	7/29/48	100	912.00	912.00	Spec. Rd.
Lincoln Way & Sloat Blvd. Viaducts (Replace doors of electric vaults) F. Kern & Sons	6/23/48	9/15/48	100	365.00	365.00	Pr.Co.Rds.
Municipal Asphalt Plant, (Dust collecting System) Rees Blow Pipe Mfg. Co.	8/18/48	3/1/49	100	17,491.00	17,491.00	Spec. Rd.

CURRENT CONTRACT DATA 1948-1949

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Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund
E - MISCELLANEOUS (Cont'd)						
Street Signs (New Type) 3d Contract Installation Milton Treacy	8/20/48	1/10/49	100	\$ 12,131.70	\$ 12,131.70	Spec. Rd.
Fairfax Ave. bet. 3d & Phelps St. (Alterations to High Pressure Water System) Eaton & Smith	9/3/48	11/22/48	100	2,968.90	2,968.90	Spec. Rd.
Marina Sewage Pumping Plant (Replace existing float tubes) A. L. Verdier	10/13/48	11/16/48	100	696.00	696.00	General
Greenwich St. bet. Montgomery & Sansome Sts. (Repair Stair- way) Arras Bros.	10/22/48	2/8/49	100	680.00	680.00	Spec. Rd.
Union & Calhoun Sts. (Repairs to Stairway) Adam Arras & Son	10/18/48	10/29/48	100	784.00	784.00	Spec. Rd.
California Palace Legion of Honor (75,000 Gal. Concrete Fire Cistern) Minton & Kubon	11/10/48	5/20/49	100	17,860.00	17,860.00	General
Native Sons Monument (Moving from Turk & Market Sts. to Golden Gate Park) Adam Arras and Sons	11/19/48	1/4/49	100	4,989.00	4,989.00	Spec. Rd.
North Point Sewage Treatment Plant at Bay & Grant Ave. (Construction) M.W.K. Corp; Fred J. Early Jr. Co.; Stolte Inc., Haas & Rothchild	11/28/48		10	8,289,525.00	828,950.00	Bonds 1944

CURRENT CONTRACT DATA 1948-1949

Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund
E - MISCELLANEOUS (Cont'd)						
Isalais Creek Bridge in 3d St. (Construction of double leaf Bascule Bridge) Duncanson & Harrelson	11/17/48		32	\$1,214,277.00	\$388,568.00	Pr.Co.Rd.
Street Sign Plates, 4th Contract Purchaser of Supplies	11/16/48	1/15/49	100	14,230.08	14,230.08	Spec. Rd.
Central Fire Alarm Station (Clean & paint 2 Radio Towers) R. W. Read & Co.	12/22/48	2/15/49	100	985.00	985.00	General
Police Dept. Pistol Range Lake Merced (Manhole & Culvert) Shanmac Co.	12/10/48	2/18/49	100	1,193.00	1,193.00	General
4th St. Bridge at Channel St. (Repair counterweight) J. H. Mohr Inc.	1/5/49	6/27/49	100	430.00	430.00	Spec. Rd.
Street Signs (New Type) 4th Contract (Installation) M. J. Lynch	1/5/49	4/7/49	100	13,852.50	13,852.50	Spec. Rd.
LaPlace Canyon Sewage Pump, Portola Dr. E of O'Shaughnessy Blvd. (Sewage pump & Force Main) I. G. Shannon	1/26/49	5/12/49	100	8,235.32	8,235.32	Bonds 1944
St. Charles Ave. at Stanley St. (Construct timber stairway) Wm. McIntosh	1/29/49	3/4/49	100	494.00	494.00	Spec. Rd.
Phelps St. at Fairfax Ave. (Relocate A.W.S.S. pipe) E. J. Treacy	2/11/49	4/14/49	100	1,432.62	1,432.62	General
48th Ave. & Fulton St. (Test Boring) J. G. Grattan	3/16/49	4/27/49	100	220.96	220.96	Bonds 1944

CURRENT CONTRACT DATA 1948-1949

Description & Contractor	Awarded	Completed Date	Completed %	Contract Amount	Amount Expended 1948-1949	Fund
E - MISCELLANEOUS (Cont'd)						
Portola Dr. S. of Terrace Dr. (Remove trees)						
Al. Canet Tree Service	3/23/49	4/19/49	100	\$ 167.00	\$ 167.00	Spec. Rd.
Marina Sewage Pumping Station (Alteration Ventilation System)						
H. I. Treacy	3/25/49	5/16/49	100	449.00	449.00	General
Mission St. bet. 14th St. of Crescent Ave. (Remove parking meter posts & reinstall)						
R. Flatland	4/15/49	6/6/49	100	787.50	787.50	Spec. Rd.
Stockton St. Tunnel (Clean- ing & painting)						
Sunset Cleaning & Painting	4/13/49	6/30/49	100	6,489.00	6,489.00	Spec. Rd.
48th Ave. & Fulton (Sewage Pump Station sewer & appurtenances)						
Rademann - Guisto	6/22/49			89,795.00		Bonds 1944
Totals awarded and expended during fiscal year				\$9,700,163.58	\$1,417,309.86	

APPENDIX II

BUREAU OF ARCHITECTURE

REPORT OF ACTIVITIES

Showing all work completed, contracts under construction and work in progress, and work under preparation - July 1, 1948 to June 30, 1949.

WORK COMPLETED

Board of Education

School Buildings

City College of San Francisco - (S. F. Junior College)		
Alterations to West Campus, Bldg. #6		\$ 8,116.96
Alterations to Rooms 3, 55 and 56		11,551.15
Re-installation of bronze lettering		840.00
Hillcrest	- Boring test holes	317.50
Polytechnic High	- Alterations & additions to heating system	12,199.50
Roosevelt Junior High	- Auditorium lighting system	4,500.00
	Total	\$37,525.11

Roofing

Argonne	- Repairs to roof	\$ 3,949.00
Garfield	- Alterations to roof	18,585.21
George Washington High	- Repairs to roof of Shop Building	571.00
Guadalupe	- Repairs to roof	4,211.66
Horace Mann Junior High	- Repairs to roof	2,779.25
Jefferson	- Repairs to roof	2,728.00
LeConte	- Repairs to roof	5,483.00
Mission High	- Repairs to roof play area	4,128.00
Sunnyside	- Alterations to roof	11,235.28
Sutro	- Alterations to roof	12,537.00
	Total	\$66,207.40

Temporary Portable Prefabricated Classrooms

Burnett	- Reconditioning one classroom	\$ 4,500.35
Ridge Point	- General construction Site #3	68,254.00
San Miguel	- Prefabricated buildings	28,956.00
Ulloa	- Additional classrooms	22,981.00
Various	- Portable prefabricated classrooms	82,835.12
	Total	\$207,526.47

San Francisco Hospital

Extension to property lines of existing dry stand pipes	\$ 16,624.83
Service Bldg. - Alterations & additions	2,100.81
Tubercular Bldg. - Miscellaneous repairs	56,124.39
Interior painting	40,259.00
Asphalt tile, misc. waterproofing	19,866.80
Total	\$134,975.83

Laguna Honda Home

Employees dining room - Acoustical tile	\$ 2,484.00
Electric freight elevator - Installation of a plunger	6,531.00
Wards M & E, and Main Kitchen alterations	23,914.93
Total	\$32,929.93

Health Center Building - Miscellaneous alterations	\$4,977.25
- Basement - Replace hot water mains & branches	4,654.00
Total	\$9,631.25

Hassler Health Home - Low pressure steam boiler	\$ 8,540.00
Wards 1, 2, 3, 4 heating system	11,185.00
Total	\$19,725.00

City Clinic - Interior painting	\$ 3,209.74
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Excelsior Health Center - Alterations, new exit	\$ 3,557.00
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Noe Valley Health Center - Alterations	\$ 7,676.00
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Fire Department

Puumping Station #1 - Repair smoke stacks	\$3,468.00
Engine #3 - Repair skylight	2,197.00
Total	\$5,665.00

Park Commission

Conservatory - (Golden Gate Park) - General Construction of new green houses, alterations to head house	\$17,757.00
M. H. DeYoung Museum - (Golden Gate Park) - Replacing main service switch, installing a lighting panel	\$ 2,885.45
Kezar Stadium - Reconditioning & additions to toilets	\$40,565.22
Zoological Gardens - Pachyderm House - Heating, ventilating and alterations	\$10,234.55
Chimpanzee House - alterations	4,774.00

Legion of Honor (Lincoln Park) - Repairs to metal roof	\$ 3,042.78
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APPENDIX II

City Hall

Information booth - Elevator lobby	\$ 1,690.00
General exterior repairs	31,512.77
Installation new vacuum pump	6,525.00
Construction - 2 new court rooms	46,883.32
Total	\$86,611.09

Civic Center

Civic Auditorium - Furnish & install new chairs upper gallery	\$60,421.00
- New portion - Larkin Hall	9,133.31
- Metal safety guards & handrails in attic & basement fan rooms	4,869.09
Total	\$74,428.40

Veterans War Memorial Bldg. - Alteration to Museum of Art	\$12,366.99
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Main Library - Electric lighting in Reference Special & Art Book Rooms	\$ 6,588.00
- Alterations to 3rd floor	6,585.00

Retirement Building

Air conditioning equipment	\$5,252.00
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Public Welfare Building

Construction of new entrance and elevator	\$59,644.14
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Miscellaneous

Repairs on Freight elevator at 147 Natoma Street	\$2,180.00
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CONTRACTS UNDER CONSTRUCTION AND
WORK IN PROGRESS

Board of Education

School Buildings (General)

Francis Scott Key - Additions	\$ 67,131.00
Francisco Jr. High - Machine shop	5,677.00
Fremont - Boring of test holes	1,000.00
Galileo High - Shop alterations	10,949.00
Grant - Additional playground area	15,833.00
Lawton - Addition and alterations	258,931.00
Madison - Repairing acoustical tile	1,568.00
Mission High - Paint machine shop, auto shops, etc.	4,273.00
Polytechnic High - Boiler room enclosure	5,930.00
Interior painting of shops	9,555.00

Redding - Repairs to the exterior sash	\$ 677.00
Installation of wire glass	1,617.00
Roosevelt Jr. High - Sprinkler system on stage	997.00
City College of San Francisco (S. F. Jr. College)	
- Paint technology laboratory	43,703.00
Sarah B. Cooper)	
Laguna Honda) - Enclosing interior stairs	13,591.00
Golden Gate)	
Commodore Sloat)	
Jefferson) - Alterations to storage rooms	5,710.00
Daniel Webster)	
Mission High)	
Balboa High)	
George Washington High) - Asbestos curtains	20,400.00
Girls' High)	
Sherman)	
Presidio Jr. High)	
Emerson)	
Raphael Weill) - New exits	9,748.00
Farragut)	
Bryant)	
James Lick Junior High)	
Lowell High) - Interior alterations	5,259.00
Girls' High)	
Grattan)	
Hancock) - New exits and fire escapes	37,576.00
Marshall)	
McKinley)	
George Peabody)	
Total	\$520,125.00
Prefabricated Classrooms	
Double Rock	\$96,976.00
Ridge Point, Site #4 - General construction of	
Portable classrooms	157,998.00
Hillcrest - Moving & underpinning 3 portable	
classrooms	4,832.00
Total	\$259,806.00
Roofing	
Alamo - Roof repairs	\$11,431.00
High School of Commerce - Repairs to roof play area	10,951.00
Dudley Stone - Roof repairs	6,031.00
Grant - Repairs to roof play area	4,783.00
Hawthorne - Roof repairs	6,481.00
Lawton - Roof repairs of frame classrooms	1,532.00
Polytechnic High - Shop building - roof drain repairs	889.00

APPENDIX II

Roofing Total \$42,098.00

Department of Public Health

Laguna Honda Home - Gas and oil burner equipment	\$6,528.00
Hassler Health Home - Repairs to redwood water tank	987.00
Psychopathic Cancer Building - New sidewalk entrance	2,143.00
Total	\$9,658.00

Fire Department

Engine #27 - Truck Co. #6, Chemical #9 & Salvage Co. 2 and 4	\$222,085.00
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Park Commission

M. H. de Young Memorial Museum - Remodeling of exterior, including tower	\$183,784.00
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City Hall

Civil Service Commission - Alterations	\$21,797.00
Supervisors' Chambers - Refinishing	3,900.00
- Cork tile flooring, repairs & refinishing	1,678.00
- Stair carpet	166.56
- Lighting fixtures (Renovating & alterations)	3,325.00
- Cabinet work	4,881.00
- Renovating chairs & benches	5,385.00
- Draperies & venetian blinds	1,986.00
- Public address system	3,055.00
Total	\$46,173.56

Civic Center

Civic Auditorium - Steel walkways and railings in attic	\$ 1,661.00
- Asphalt tile flooring, third floor	734.00
- Alterations to recreation department	10,450.00
Total	\$12,845.00

Juvenile Court

Youth Guidance Center, Phase I and II (Juvenile Dention Home)	
Woodside Ave., & Portola Drive	\$2,960,000.00

WORK UNDER PREPARATION

Board of Education - New Schools
1948 Bond Issue

Ulloa Elementary School -	Project #1	
Albert F. Roller, Architect		\$ 900,000.00

Sunnydale Elementary School	Project #2	
Spencer & Ambrose, Architects		\$ 900,000.00
Miraloma Elementary School	Project #3	
Masten & Hurd, Architects		900,000.00
Sunset Elementary School "A"	Project #5	
Ward & Bolles, Architects		800,000.00
Hillcrest School	Project #6	
W. P. Day, Architect		800,000.00
Sunset Junior High School	Project #9	
Thomsen & Wilson, Architects		2,000,000.00
Fourteenth Ave. & Santiago Jr.	Project #14	
High School		2,500,000.00
Fremont Elementary School	Project #15	
Hertzka & Knowles, Architects		700,000.00
Silver Ave. Elementary School	Project #17	
W. D. Peugh, Architect		1,000,000.00
Lake Merced Elementary School	Project #20	
		1,100,000.00
Sunset Reservoir Home School Unit	Project #26	
Alfred W. Johnson, Architect		175,000.00
Abraham Lincoln High School Addn.	Project #31	
Weihe, Frick & Kruse, Architects		2,500,000.00
John A. O'Connell Vocational and		
Technical Institute	Project #33	
Dodge A. Riedy, City Architect		2,100,000.00
42nd Ave. & Santiago St. School	Project #62	
Clark & Beuttler, Architects		225,000.00
44th Ave. & Noriega St. School	Project #67	
Meyer & Evers, Architects		236,000.00
Prefabricated Classrooms	Total	\$16,836,000.00
Lake Merced Elementary School		
Lake Merced Elementary School		
Temporary portable prefabricated classrooms		\$ 65,000.00
Silver Avenue Elementary School		
Temporary portable prefabricated classrooms		60,000.00
	Total	\$125,000.00
Department of Public Health		
San Francisco Hospital		
Installation of new steam turbine & piping for		
power plant		\$131,000.00
Fire Department		
Engine No. 30, Parkside Fire House		
J. S. Gould, Architect		\$170,000.00
Park Commission		
Sharon Building - Golden Gate Park		
Alterations		\$60,000.00

APPENDIX II

M.H. de Young Memorial Museum Mezzanine Library	
Bids received May 25, 1949, Low Bid	\$ 9,734.00
This project deferred - Revision of drawings to be made	\$ 69,734.00

New Branch Libraries

Marina Branch - Chestnut & Fillmore Sts.	
Kent & Hass, Architects	\$150,000.00
Parkside Branch - 22nd & Taraval Sts.	
Hyman, Appleton & Wolfard, Architects	150,000.00
Excelsior Branch - Outer Mission	
J. S. Gould, Architect	125,000.00
Potrero Branch - 20th & Connecticut Sts.	
Pollack & Pope, Architects	50,000.00
Total	\$475,000.00

City Hall

Reproduction Bureau of Purchasing Department	
Room 50, Basement	\$12,750.00
Second Floor Alterations	
Permit Bureau	56,000.00
Total	\$68,750.00

Sunset Community Center

Junior High School	
Harry Thomsen & Aleck Wilson, Architects	\$2,000,000.00
Elementary	350,000.00
Recreation Field and Community Center	
Wm. G. Merchant, Architect	275,000.00
Branch Library	
Weihe, Frick & Kruse, Architects	175,000.00
Health Building	
Dodge A. Riedy, City Architect	85,000.00
No progress has been made on above as we are awaiting appointment of a coordinating architect for the entire project.	
Total	\$2,885,000.00

New Juvenile Court

Youth Guidance Center (Juvenile Detention Home)	
Phase III, Woodside Ave. & Portola Drive	
Receiving Bldg. - Gymnasium Bldg.	\$625,000.00

Miscellaneous

Broadway Tunnel Approaches - (Bureau of Engineering)	
Preparing Architectural Details	

RECAPITULATION

Work Completed

Board of Education	\$ 311,258.98	
Department of Public Health	211,704.75	
Fire Department	5,665.00	
Park Commission	79,259.00	
City Hall	86,611.09	
Civic Center	99,968.39	
Retirement Bldg.	5,252.00	
Public Welfare Bldg.	59,644.14	
Miscellaneous	2,180.00	
		\$ 861,543.35

Contracts Under Construction
and Work in Progress

Board of Education	\$ 822,029.00	
Department of Public Health	9,658.00	
Fire Department	222,085.00	
Park Commission	183,784.00	
City Hall	46,173.56	
Civic Center	12,845.00	
Juvenile Court	2,960,000.00	
		\$4,256,574.56

Contracts Under Preparation

Board of Education	\$16,961,000.00	
Department of Public Health	131,000.00	
Fire Department	170,000.00	
Park Commission	69,734.00	
Public Library Commission	475,000.00	
City Hall	68,750.00	
Sunset Community Center	2,885,000.00	
Juvenile Court	625,000.00	
		\$21,385,484.00
Grand Total		\$26,503,601.91

Table II

Active Applications to State for Construction Assistance
Total of 12 Projects - As of June 30, 1949

Application State No.	Construction Project	State's Share	Board of Supervisors Resolution - Ser. of 1939 No.	Date
4	Richmond - Sunset Plant Enlarge.	\$ 461,608.50	5604	6-26-46
26	Seventh Street Outfall	4,200.00	5665	7- 8-46
27	23rd Street Sewer	23,200.00	5665	7- 8-46
28	Lake St. District Sewer, Sec. "A"	150,000.00	5665	7- 8-46
647	North Point Pre-Treatment and Sedimentation	2,138,050.00	7050	12- 1-47
647A	North Point Pre-Treatment and Sedimentation (Supplemental)	819,605.34	8199	12-20-48
648	Sludge Treatment Plant	1,550,000.00	7050	12- 1-47
649	North Point Pretreatment Influent & Effluent Sewers	300,000.00	7050	12- 1-47
1138	Lake Merced Tunnel, Sec. "D"	730,000.00	8053	11- 1-48
1139	Lake Merced Sewer, Sec. "C"	439,000.00	8053	11- 1-48
1142	Scott St. Sewer, Sec. "E"	159,500.00	8053	11- 1-48
1143	Lake St. Sewer, Sec. "B"	200,000.00	8053	11- 1-48
	Sub-Total - Sewer Projects	\$6,975,163.84		
881	Islais Creek Bridge	398,383.79	7504	5-17-48
	Total Active Applications 6/30/49	\$7,373,547.63		

TABLE I
SEWAGE PUMPING STATION CAPACITIES, ETC.

Name of Station & Location	Units	Type	Size of Pump Discharge Inches	Actual Total Head Ft.	Actual Capacity G.P.M. Each	Rated Horse Power	Rated Voltage	Rated Speed R.P.M.	Year Built	Approx. Contract Cost	Sewage is Pumped into
Marina nr Casa Way	4	Horizontal	10	70	4350	100/60	440	870	1937	\$140,000	N.Pt. Outfall from Pierce
Park Merced	2	2-Horizontal	6	131	2600	30	440	870	1944	60,000	Eucalyptus Dr. Sewer from Stanley St. Division
Lake Merced Blvd.		Single Stage Pumps in Series		144	1800	50	440	1170			
Commercial St. nr Drumm St.	3	Vertical Single Stage	6	20	2100	25	220	870	1905 } 1908 } 1935 }	20,000 } 10,000 }	N. Pt. Main from District nr Lower Market St.
Sea Cliff #2 nr Sea Cliff Drive	2	Horizontal Single Stage Pumping unit	4	29	1050	15	Engine Driven	1600	1945	3,550	Richmond- Sunset Sewer Tunnel at 25th Ave. & Lake St.
Vicente at Gt. Highway	2	Vertical Single stage	5	140	650	25	220	1750	1940	57,500	
Fitzgerald nr Griffith St.	*1	Vertical Single Stage	4	47	1400	40	220	1150	1928	4,500	Sunset Interceptor from Dist. nr Sloat Blvd. & Gl. Hwy.
Sea Cliff #1 nr Sea Cliff Dr.	*2	Vertical Single Stage	4	54	350	15	220	1750		20,000	Bayview Main from Shore
-Pine Lake nr Crestlake & Wawona Drs	*1	Vertical Single Stage	4	51	460	15	220	1165	1929	2,660	Area
Hyde St. at Jefferson	2	Vertical	4	57	530	15	220	1150	1944	1,750	Sea Cliff Sta. #2 from China Beach Area
Lakeshore pk. -Lake Merced Blvd.	2	Vertical	3	29	170	5	220	1750	1948	1,500	Sunset Interceptor from Pine Lake Park
LaPlace Canyon at Portola Dr.	*2	Vertical Single Stage	4	96	310	5	220	860	1947	44,500 with forcemain	N.Pt. Outfall from Beach St. Sewer
				59	1300	50	440	1150	1949	35,000 excluding forcemain	Eucalyptus Dr. Sewer from Stanley St. Diver'n
					360	10	220	1755		82,360	O'Shaughnessy Blvd.

-Temporary station. *Submerged pump. All pumps are centrifugal type, motor driven, unless otherwise noted.

Table II

MARINA SEWAGE PUMPING STATION

CONTRIBUTING POPULATION - 63,000 DISTRICT AREA - 1,025 ACRES

AVERAGE NET OPERATING HEAD - 38.0 FT.

Month	PUMPAGE IN MILLION GALLONS:				Million Foot Gallons per Month	Power - K.W.H.		K.W.H. per Million foot Gallons
	Total per Month	Daily Aver- age	Max. per Day	Min. per Day		Consumed By Pumps Per Month	Consumed by Lights & Auxil's. Per Month	
July, 1948	154.5	5.00	5.375	4.762	5871.0	31690	2270	5.39
Aug.	159.0	5.13	5.975	4.075	6042.0	33316	2250	5.50
Sept.	165.9	5.50	6.625	5.000	6304.2	32400	2220	5.10
October	179.9	5.80	6.900	5.225	6836.2	32110	2230	4.70
November	170.8	5.72	9.560	4.062	6490.4	31576	2270	4.80
December	184.6	5.96	9.437	4.287	7014.8	37982	2230	5.40
January, '49	188.0	6.06	8.237	4.412	7144.0	36346	2050	5.08
February	177.1	6.32	8.862	5.450	6729.8	33958	2090	5.04
March	217.7	7.22	8.787	5.512	8272.6	40094	2490	4.84
April	175.5	5.85	7.262	4.550	6669.0	33450	2440	5.01
May	187.6	6.25	7.475	5.750	7138.8	36716	2410	5.01
June	175.9	5.86	6.275	5.750	6684.2	34320	2150	5.13
Total Per Year	2136.5	5.85	{Daily Average		81197	413959	27100	5.09 Average

Average Overall Efficiency of each Pump and its Motor - 63%

Table III

COMMERCIAL STREET SEWAGE PUMPING STATION 1948-49

CONTRIBUTING POPULATION - 14,000 DISTRICT AREA - 92.5 ACRES

AVERAGE OPERATING HEAD - 20.0 FT.

PUMPAGE IN MILLION GALLONS:				Power - K.W.H.		K.W.H. per Million Foot Gallons
Total per Month	Daily Aver- age	Max. per Day	Min. per Day	Consumed by Pumps per Month	Consumed by Lights & Auxil's per Month	
Month						
July, 1948	22.18	.71	.94	.75	443.6	484
August	22.02	.71	.91	.72	440.4	474
September	21.39	.71	.85	.60	427.8	502
October	21.85	.70	.86	.75	437.0	494
November	22.72	.75	.93	.73	454.4	470
December	25.53	.82	1.16	.72	510.6	510
January, 1949	24.06	.77	1.25	.73	481.2	548
February	21.57	.76	.98	.79	431.4	431
March	27.29	.87	1.24	.75	545.8	646
April	21.16	.70	.91	.75	423.2	524
May	20.43	.64	.90	.69	408.6	488
June	22.50	.75	.88	.72	450.0	388
Total						
Per Year	272.70	.74		34540	5454.0	5959
						6.34 (Average)

Average Overall Efficiency of Each Pump and Motor - 46.5%

TABLE IV

SEACLIFF SEWAGE PUMPING STATION NO. 1 1948-49
 CONTRIBUTING POPULATION - 50
 DISTRICT AREA - 4 ACRES

AVERAGE OPERATING HEAD 49.0 FEET									
PUMPAGE IN MILLION GALLONS:					Million	Power - K.W.H.		K.W.H.	
Month	Total per Month	Daily Average	Max. per Day	Min. per Day	Gallons per Month	Consumed by Pumps per Month	by Lights & Auxil's per Month	per Million Foot	Gallons
July, 1948	.0514	.0016			2.519	17	2		6.75
August	.0530	.0017		Date not availavle	2.600	17	1		6.52
September	.0620	.0020			3.040	20	2		6.58
October	.0551	.0017			2.700	18	1		6.65
November	.0720	.0024			3.528	23	1		6.55
December	.0810	.0026			3.965	26	2		6.68
January, '49	.0683	.0022			3.300	22	2		6.66
February	.0699	.0025			3.420	22	2		6.44
March	.0869	.0028			4.250	27	2		6.35
April	.0556	.0018			2.725	18	2		6.60
May	.0567	.0018			2.775	18	2		6.50
June	.0588	.0019			2.880	19	2		6.60
Total Per Year	.7707	.0021	{Daily Average		37.702	247	21		6.50 (Average)

Average Overall Efficiency of Each Pump and Motor - 46.5%

TABLE V

SEACLIFF SEWAGE PUMPING STATION NO. 2 1948-49

CONTRIBUTING POPULATION - 2400

DISTRICT AREA - 83.4 ACRES

AVERAGE OPERATING HEAD 94.0 FT.

PUMPAGE IN MILLION GALLONS:					Power - K.W.H.		K.W.H.
Month	Total per Month	Daily Aver- age	Max. per Day	Min. per Day	Million	Consumed	Consumed
					Foot Gallons per Month	By Pumps per Month	By Lights & Auxil's. per Month
July, 1948	3.72	.120	.140	.101	349	2118	424
August	3.92	.126	.160	.100	368	2230	250
September	3.98	.132	.166	.101	374	2259	781
October	4.36	.150	.245	.079	410	2481	559
November	4.39	.146	.227	.111	413	2500	940
December	3.87	.125	.240	.120	364	2230	1370
January, 1949	4.99	.161	.290	.120	469	2821	1159
February	4.45	.193	.292	.130	418	2538	1782
March	4.92	.158	.259	.135	463	2821	1499
April	4.76	.159	.276	.129	447	2720	1120
May	5.01	.161	.326	.118	470	2838	682
June	4.26	.142	.174	.111	401	2179	541
Total Per Year	52.63	1.48 (Daily Average)			4946	29735	11107
							6.06 (Average)

Average Overall Efficiency of Each Pump and Motor - 56.8%

Table VI

PARKMERCED SEWAGE PUMPING STATION 1948-49

CONTRIBUTING POPULATION - 7500

DISTRICT AREA - 83.4 ACRES

AVERAGE OPERATING HEAD - 123.0 FEET

PUMPAGE IN MILLION GALLONS:					Power - K.W.H.			K.W.H.
Month	Total per Month	Daily Aver- age	Max. per Day	Min. per Day	Million Foot Gallons per Month	Consumed by Pumps per Month	Consumed By Lights & Auxils. per Month	per Million Foot Gallons
July, 1948	12.33	.398	.491	.348	1516.6	8356	824	5.51
August	12.27	.396	.460	.350	1509.2	8295	505	5.50
September	11.96	.398	.456	.341	1471.0	8120	1000	5.52
October	12.68	.409	.744	.349	1559.6	8510	1090	5.47
November	12.16	.405	.783	.331	1495.6	8360	1080	5.51
December	11.24	.363	.804	.320	1382.5	8500	1710	5.53
January, 1949	11.78	.379	.879	.360	1449.6	8100	1340	5.51
February	10.12	.361	.530	.334	1244.7	7100	1540	5.52
March	10.02	.324	.743	.316	1232.4	7160	1960	5.53
April	12.59	.419	.786	.339	1547.5	8490	1110	5.49
May	12.77	.425	.588	.340	1570.7	8590	1110	5.49
June	11.46	.382	.435	.329	1409.5	7860	940	5.51

Total
Per Year

141.38

.388

17388.9

97441

14209

5.51
(Average)

Average Overall Efficiency of Each Pump and Motor 56.8%

Table VII

VICENTE STREET SEWAGE PUMPING STATION 1948-1949

DISTRICT AREA - 51.4 ACRES

ESTIMATED CONTRIBUTING POPULATION - 2,100

AVERAGE OPERATING HEAD - 56.0 FEET

Month	PUMPAGE IN MILLION GALLONS:				Power - K.W.H.		K.W.H. per Million Foot Gallons
	Total per Month	Daily Aver- age	Max. per Day	Min. per Day	Consumed by Pumps per Month	Consumed by Lights & Auxil's per Month	
July, 1948	3.59	.116			1420	Negligible	7.06
August	3.94	.127	Data not		1540		6.97
September	3.58	.119	available		1420		7.06
October	3.62	.117			1400		6.92
November	3.70	.123			1440		6.95
December	3.48	.112			1380		7.08
January, 1949	3.96	.127			1540		6.94
February	3.36	.120			1300		6.92
March	3.96	.127			1540		6.94
April	3.87	.129			1520		7.00
May	5.41	.175			2220		6.56
June	3.95	.132			1680		6.86
Total Per Year	46.42	.127			18400		6.92 (Average)

Average Overall Efficiency of Each Pump and Motor 44.5%

Table VIII

FITZGERALD AVENUE SEWAGE PUMPING STATION 1948-49

CONTRIBUTING POPULATION - 800

DISTRICT AREA - 30 ACRES

AVERAGE OPERATING HEAD - 48.0 FEET

PUMPAGE IN MILLION GALLONS:				Million Foot Gallons per Month	Power - K.W.H. Consumed by Pumps per Month	Consumed by Lights & Auxil's per Month	K.W.H. per Million Foot Gallons
Month	Total per Month	Daily Aver- age	Max. per Day	Min. per Day			
July, 1948	1.79	.057				Negligible	7.23
August	2.19	.070			620		7.23
September	1.84	.061			760		7.10
October	1.68	.054			640		7.20
November	1.69	.056			580		7.40
December	2.74	.088			600		6.55
January, 1949	2.81	.080			860		6.62
February	1.57	.056			890		7.43
March	1.99	.064			560		6.92
April	3.22	.107			660		6.90
May	2.34	.075			1060		6.80
June	1.70	.057			790		7.20
					580		
Total Per Year	25.56	.070 { Daily Average					7.00 (Average)
					1229.69	8600	

Ave Average Overall Efficiency of Each Pump and Motor 41.7%

Table IX

PINELAKE DISTRICT SEWAGE PUMPING STATION 1948-49

CONTRIBUTING POPULATION - 25

DISTRICT AREA - 3 ACRES

AVERAGE OPERATING HEAD - 56.0 FEET

PUMPAGE IN MILLION GALLONS:				Million Foot Gallons per Month	Power - K.W.H. Consumed by Pumps per Month	Consumed by Lights & Auxil's per Month	K.W.H. per Million Foot Gallons
Month	Total per Month	Daily Aver- age	Max. per Day	Min. per Day			
July, 1948	0.0367	.0011			2.055	19	9.24
August	0.0159	.0005	Data not available		0.890	8	9.00
September	0.0182	.0006			1.020	11	9.09
October	0.0366	.0011			2.050	18	9.20
November	0.0378	.0012			2.120	19	8.97
December	0.0649	.0021			3.620	33	9.10
January, 1949	0.0340	.0011			1.905	17	8.95
February	0.0392	.0014			2.200	22	9.07
March	0.0684	.0022			3.880	35	9.04
April	0.1150	.0384			6.450	58	9.00
May	0.0703	.0023			3.940	36	9.12
June	0.0414	.0013			2.320	22	9.05
Total Per Year	0.5784	.00158			32.450	298	9.20 Average

Average Overall Efficiency of Each Pump and Motor 35.4%

Table X

HYDE STREET SEWAGE PUMPING STATION

CONTRIBUTING POPULATION - INDUSTRIAL & RECREATIONAL DISTRICT AREA - 14 ACRES

AVERAGE OPERATING HEAD - 29.0 FEET

Month	PUMPAGE IN MILLION GALLONS:				Million Foot Gallons per Month	Power - K.W.H.		K.W.H. per Million Foot Gallons
	Total per Month	Daily Aver- age	Max. per Day	Min. per Day		Consumed by Pumps per Month	Consumed by Lights & Auxil's per Month	
July, 1948	.3687	.0118			10.68	81	143	7.59
August	.4885	.0154	Data Not available		14.15	106	183	7.55
September	.5318	.0177			15.42	115	173	7.46
October	.5100	.0164			14.79	109	123	7.54
November	.8790	.0292			25.49	189	186	7.43
December	1.4402	.0465			41.76	327	61	7.83
January, 1949	.5159	.0166			14.96	113	161	7.54
February	.6365	.0227			18.49	140	87	7.60
March	1.5166	.0489			43.96	345	152	7.88
April	.7279	.0242			21.10	157	132	7.48
May	.9356	.0302			27.18	204	118	7.52
June	1.0817	.0361			31.36	238	104	7.60
Total Per Year	9.6324	.0265	{ Daily Average		279.34	2124	1623	7.6 Average

Table XI

SEWAGE PUMPING STATIONS
COST OF OPERATION
FISCAL YEAR 1948-1949

Item of Cost	S T A T I O N S									
	Marina	Commercial	Sea Cliff No. 1	Park-merced No. 2	Vicente	Fitzgerald	Pine-Lake	Hyde Lake-St. shore	LaPlace Canyon	
Salaries	\$10,210	\$8,276	\$100	\$4,431	\$4,431	\$635	\$1,635	\$100	\$635	\$50
Contractual Services	2,220	720	70	615	390	390	760	17		
Equipment Replacement	65			180						
Materials & Supplies	882	255	35	210	180	85	57	17	40	
Heat, Light & Power	6,180	866	6	855	2,011	366	167	6	92	
	\$19,557	\$10,117	\$211	\$6,116	7,417	\$1,476	\$1,619	\$140	\$767	\$50
										\$25
Additions & Imprvmnt.	\$630	\$120								
Cost of Operation per M.G.		36.29	274	116.20	51.16	31.58	63.34	242.38	79.64	
Cost of Operation per capita	.31	.72	4.28	2.83	.96	.70	2.02	5.60		

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

COST OF OPERATION

Fiscal Year 1948-1949

Item of Expenditure	Total Plant Operation	Sewage Treatment with Chlorination	Sunset Pumping Plant	Sludge Disposal Conditioning & Filtration	Sewage Treatment without Chlorination
Permanent Salaries	\$ 61,221	\$39,666	\$ 7,056	\$14,499	\$34,374
Holidays	\$ 1,980	614	131	244	561
Overtime	45	21	9	15	19
Temporary Salaries	4,963	3,714	493	756	3,490
Wages	12,292	7,120	1,713	3,459	6,376
Contractual Services	10,286	7,539	1,084	1,663	7,839
Heat, Light & Power	12,519	8,162	3,365	1,092	7,306
Materials & Supplies	24,128	19,936	3,706	3,486	5,650
Totals	\$126,543	\$86,772	\$14,557	\$25,214	\$65,615

Richmond & Sunset Flow (gravity)
Sunset Flow (pumped)
Total

Cost of Operation per MG \$30.30
For 4171 MG

Estimated cost per capita (based on 220,000 population) \$0.57 per year

4,754 cu yd filter cake, estimated value \$23,770, delivered to City Parks during year for use as fertilizer

The Sunset Pumping Plant was shut down during storms in order to avoid handling excessive quantities of sand in the sump.

Additional Expenditures

Plant Improvements	\$ 836
Painting	1,035
Office Engineering	35
Equipment	
Total	\$2,261

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 1 - SEWAGE TREATMENT DATA

Fiscal Year 1948-1949

Month	Flow, Million Gallons Gravity Pumped Total		Days By-Passed Gravity Pumped Flow	Rain Inches	*Susp. Solids, ppm			5-Day BOD, ppm		
					Raw	Eff	% Rem	Raw	Eff	% Rem
July 1948	197.4	127.0	324.4	.01	340	67	80	295	160	46
Aug	199.3	132.0	331.3	.01	300	71	76	335	155	54
Sept	217.6	133.6	351.2	.03	370	81	78	300	125	58
Oct	207.2	139.0	346.2	.24	300	76	75	275	135	51
Nov	219.8	129.6	349.4	.93	265	97	63	290	165	43
Dec	284.8	89.0	373.8	4.93	230	73	68	235	145	38
Jan 1949	225.4	120.2	345.6	2.19	225	61	73	275	140	49
Feb	209.0	100.8	309.8	.50	195	67	66	200	110	45
Mar	274.8	104.0	378.8	11.70	265	82	70	200	130	35
Apr	212.3	147.8	360.1		255	88	66	330	200	40
May	220.5	136.7	357.2	.05	275	73	73	280	150	46
June	200.1	142.9	343.0		275	45	84	300	120	60
Totals	2668.2	1502.6	4170.8	18.57	275	73	73	275	145	47
Wt Avg #										

By-Passing: Sunset - 41.00 days, rain

* Suspended solids by modification of Chicago Sanitary District filter paper method.
Raw sewage sampled after mechanical bar racks.

Weighted averages calculated from total flows by months.

TABLE 1 - SEWAGE TREATMENT DATA (Cont')
Fiscal Year 1948-1949

Month	Alkalinity as CaCO ₃ , ppm Raw Eff	Chlorides, ppm Raw Eff	Sewage Temp F	Screen- ing cu ft	** Grease, Gallons	Sand, Pre- treat	cu yd Sun- set	Chlorination, lb Pre Post
July 1948	195	64	67	491	27,900	55	26	29,065
Aug	200	62	67	521	27,900	53	28	29,180
Sept	205	56	68	542	27,000	138	46	29,520
Oct	205	66	67	576	27,900	166	55	29,820
Nov	190	59	66	561	26,600	178	61	28,300
Dec	160	56	62	525	27,900	215	67	18,630
Jan 1949	195	68	57	567	27,900	211	65	24,950
Feb	165	54	59	511	25,200	279	34	21,170
Mar	155	50	60	600	27,900	357	110	21,090
Apr	210	82	60	541	27,000	84	33	32,240
May	210	70	60	556	27,900	171	78	29,090
June	225	67	60	538	27,000	86	29	31,020
Totals				6,529	328,100	1,993	632	324,075
Wt Avg***	195	63	63					

* Removed by Pre-Treatment bar racks only; screenings from Sunset sump not included.

** Approximate removals from grit-grease tanks; additional removals in Mixing and Sedimentation Building not included.

*** Weighted averages calculated from total flows by months.

Pre-Chlorination - 30 lbs per million gallons
Post-Chlorination - 9 AM to 6 PM, 100 lbs per million gallons
6 PM to 9 AM, 80 lbs per million gallons
No post-chlorination when Sunset flow by-passed.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 2 - SLUDGE TO DIGESTER AND GAS PRODUCTION

Fiscal Year 1948-1949

Month	M Gallons	Raw Sludge to Digester		Volatile M lb	Metered Gas To Boilers	Production - cu ft*		Digester Temp F
		% Total Solids	Dry Sol- ids M lb			To Waste	Total	
July 1948	2,154	3.97	718	81.7	1,223	724	1,947	86
Aug	2,047	4.03	694	83.1	2,477	2,222	4,700	88
Sept	2,046	4.12	708	81.8			4,251#	90
Oct	2,094	4.02	701	82.7			5,900##	90
Nov	1,964	3.95	652	83.8	3,015	2,241	5,255	92
Dec	1,478	3.69	457	82.0	2,955	1,145	4,100	93
Jan	1,956	3.79	623	83.1	3,247	1,805	5,052	91
Feb	1,359	3.70	422	82.3	2,727	1,256	3,982	95
Mar	1,447	3.68	448	78.5	2,684	1,113	3,797	95
Apr	2,311	3.90	755	79.6	3,005	3,433	6,438	95
May	2,240	3.82	719	82.9	3,259	3,033	6,291	95
June	2,426	4.31	879	82.3	3,140	3,676	6,816	95
Totals	23,522		7,776		6,385	27,732	58,529	
Wt Avg**		3.94		82.2				92

* Some leakage occurs at digester seal.

** Based on accumulated totals for year. All raw sludge computed at 8.40 pounds per gallon

Estimated - gas wasted to atmosphere from Sept. 22nd while contractor making alterations in gas piping.

Estimated - gas wasted to atmosphere to Oct. 5th while contractor making alterations in gas piping.

TABLE 3 - DIGESTED SLUDGE TO ELUTRIATION
Fiscal Year 1948-1949

Month	Sludge, Thousands of Gallons		% Total Solids		Dry Solids, Thousands of lb.	
	Supn't	Bottom	Supn't	Bottom*	Supn't	Bottom
July 1948	2309.0	0	1.55	3.70	297.4	0
Aug	2202.2	0	1.02	3.89	186.7	0
Sept	2195.6	0	1.01	3.96	182.4	0
Oct	2248.9	0	1.87	3.48	349.1	0
Nov	2114.4	0	1.21	3.27	211.9	0
Dec	1626.9	0	.64	3.34	86.4	0
Jan 1949	2105.5	0	.93	3.28	162.2	0
Feb	1489.5	0	.60	3.56	74.1	0
Mar	1587.2	27.1	.27	3.84	35.5	7.6
Apr	2460.7	0	.60	3.77	122.5	0
May	2395.3	0	1.29	3.67	256.7	0
June	2576.0	0	1.35	2.89	289.1	0
Totals	25311.2	27.1	1.07	25338.3	2254.0	7.6
Wt Avg**						2261.6

* For information purposes only

** Based on accumulated totals for year. All supernatant sludge from digester computed at 8.31 pounds per gallon, and all bottom sludge at 8.40 pounds per gallon.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 3 - DIGESTED SLUDGE TO ELUTRIATION (Cont'd)
Fiscal Year 1948-1949

Month	Supn't	% Volatile Bottom*	Net	Supn't	Volatile, Thousands of lb		Avg Alk As CaCO ₃ , ppm	Solids To Elut To Dig
		Bottom*			Supn't	Bottom		
July 1948	65.2	63.7	65.2	193.9	0	193.9	1770	.41
Aug	64.4	62.7	64.4	120.2	0	120.2	1980	.27
Sept	63.4	60.6	63.4	115.6	0	115.6	2110	.26
Oct	64.1	62.8	64.1	223.8	0	223.8	1930	.50
Nov	62.9	62.8	62.9	133.3	0	133.3	1650	.32
Dec	63.5	61.5	63.5	54.9	0	54.9	1590	.19
Jan 1949	61.3	60.5	61.3	99.4	0	99.4	1570	.26
Feb	60.5	59.3	60.5	44.8	0	44.8	1530	.18
Mar	57.9	57.0	57.8	20.5	0	20.5	1460	.10
Apr	58.6	57.1	58.6	71.8	4.3	76.1	1610	.16
May	59.8	57.9	59.8	153.5	0	153.5	1830	.36
June	62.5	62.3	62.5	180.7	0	180.7	1880	.33
Totals				1412.4	4.3	1416.7		
Wt Avg**	62.8		62.5					

* For information purposes only.

** Based on accumulated totals for year.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 4 - VACUUM FILTER OPERATION
Fiscal Year 1948-1949

Month	M Gallons	% Solids	Solids M lb	% Volatile	Volatile M lb	Ash M lb	Volatile Ash	Alk as CaCO ₃ , ppm
July* 1948	112.9	3.58	34.3	65.6	22.5	11.8	1.90	295
Aug	593.7	3.41	170.9	65.3	111.7	59.2	1.88	370
Sept	482.7	3.27	133.4	64.2	85.6	47.8	1.79	410
Oct	629.3	3.94	209.8	62.8	131.9	77.9	1.69	390
Nov	587.4	3.77	188.4	63.3	119.3	69.1	1.73	375
Dec	323.7	4.08	112.3	63.7	71.5	40.8	1.71	315
Jan 1949	510.0	3.96	171.4	62.0	106.2	65.2	1.63	365
Feb	392.2	4.40	147.6	60.6	89.5	58.1	1.54	350
Mar	434.0	5.30	196.6	57.3	112.8	83.8	1.34	350
Apr	455.4	4.58	176.1	58.6	103.1	73.0	1.42	425
May	565.9	4.41	211.4	59.2	125.1	86.3	1.45	450
June	584.1	3.97	196.6	62.1	122.1	74.4	1.59	460
Totals	5671.3		1948.8		1201.3	747.4		
Wt Avg**		4.08		61.6			1.61	390

* Vacuum filtration system out of service for contractual changes.

** Based on accumulated totals for year.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 4 - VACUUM FILTER OPERATION (Cont'd)

Fiscal Year 1948-1949

Month	lb FeCl ₃	% FeCl ₃ on Solids	Hours Filter Operated	lb Solids Per hr	lb Solids			Filter Cake Water % Water	Filter Cake M lb	Gallons Sludge Filtered		Filter Cake cu yds
					Per sq ft	Filter Per hr	Filter Per hr			Filter Per hr	trate M lb Per hr	
July* 1948	1221	3.56	34.18	1020	5.10	72.2	126.0	3300	24.3	110		
Aug	5751	3.37	180.19	970	4.85	74.1	673.1	3290	24.1	555		
Sept	3958	2.97	147.48	920	4.60	73.9	520.7	3270	24.2	478		
Oct	6887	3.14	190.36	1120	5.60	75.0	859.9	3300	23.4	607		
Nov	7989	4.24	175.38	1100	5.50	73.2	722.2	3350	24.4	540		
Dec	4702	4.19	104.44	1100	5.50	74.8	445.7	3100	22.1	307		
Jan 1949	5351	3.12	163.63	1000	4.59	73.3	654.5	3120	22.5	491		
Feb**	4809	3.26	126.79	1190	5.95	72.1	540.0	3100	23.1	377		
Mar	3752	1.91	136.47	1460	3.65	68.8	638.5	3180	22.9	483		
Apr	5164	2.93	128.49	1370	3.43	70.2	592.5	3550	25.5	481		
May	6849	3.24	156.95	1340	3.36	70.1	705.8	3610	26.0	575		
June	7742	3.94	150.88	1300	3.26	70.4	664.3	3880	28.5	590		
Totals	64175		1695.24				7143.2			5594***		
Wt Avg****		3.29		1140	4.25	72.8		3350	24.3			

*Vacuum filtration system out of service for contractual changes.

**2 Filters operating - 1 with Vinyon Cloth Jan 23 to Feb 17

1 Filter operating Feb 17 to Feb 28 - Woolen Cloth

2 Filters operating after Feb 28 - Woolen Cloths

*** 4754 cu yd to City Parks

840 cu yd to Public

**** Based on accumulated totals for year.

INDUSTRIAL WASTE SURVEY SUMMARY OF TREATMENT FACILITIES SOUTHEAST SEWERAGE DISTRICT

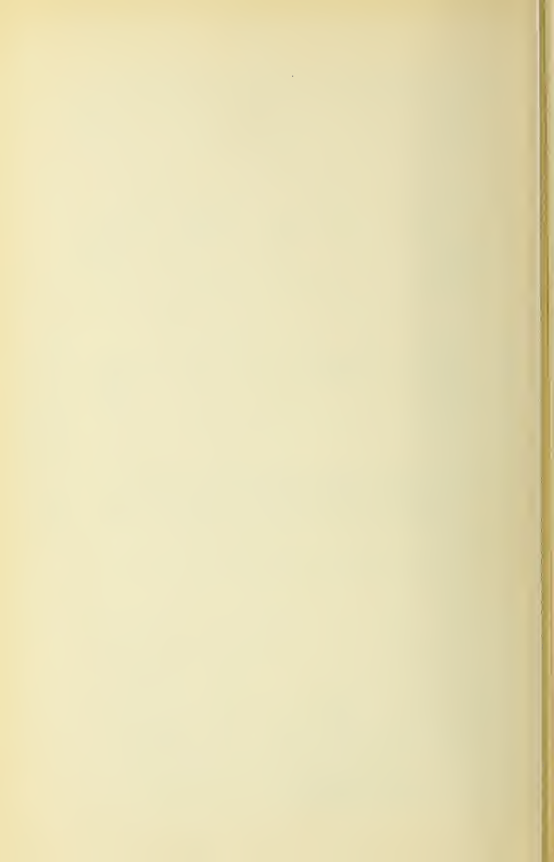
TYPE OF INDUSTRY	Total		NO TREATMENT FACILITIES REQUIRED		PRESENT FACILITIES ADEQUATE		ADDITIONAL FACILITIES REQUIRED	
	No.	G.P.D.	No.	G.P.D.	No.	G.P.D.	No.	G.P.D.
Animal By-Products Processing	8	203,500					5	99,500
Barrel Reconditioning	2	24,000			3	104,000	2	24,000
Bottle Washing	1	3,000					1	3,000
Bottling	3	15,800					2	14,800
Brewing	1	500,000	1	1,000				
Can Manufacturing	2	63,500	2	63,500	1	500,000		
Cement and Stone Processing	5	8,800					5	8,800
Copra Processing	1	5,000					1	5,000
Curled Hair Processing	1	16,000					1	16,000
Dairy Products Processing	3	198,000			1	8,000	2	190,000
Electric Generating	2	127,800	1	2,800			1	125,000
Equipment Manufacturing	3	1,800	1	1,000			1	700
Fish Canning	6	1,520,000			1	180,000	5	1,340,000
Food Processing	5	54,200					5	54,200
Gas Manufacturing	1	15,000	1	15,000				
Glue Manufacturing	1	14,000					1	14,000
Hide Tanning	2	270,000					2	270,000
Laundring	2	8,600					2	8,600
Meat Slaughtering and Packing	8	330,000					8	330,000
Metal Plating	1	100,000			1	100,000		
Metal Processing	4	18,000	1	600	1	6,000	2	11,400
Metal Refining	1	90,000			1	90,000		
Miscellaneous	3	9,500			1	500	2	9,000
Non-Metal Processing	7	17,600	1	200	2	15,200	4	2,200
Paint Manufacturing	5	58,800	3	5,300	1	33,000	1	20,500
Poultry Killing and Dressing	3	1,500					3	1,500
Printing and Lithographing	1	5,000	1	5,000				
Rope Manufacturing	1	3,000					1	3,000
Steam Cleaning	3	2,900			3	2,900		
Sugar Refining	1	615,000					1	615,000
Warehousing and Trucking	7	6,700			4	3,900	3	2,800
Total	94	4,307,000	12	94,400	21	1,043,600	61	3,169,000

TABLE B
INDUSTRIAL WASTE SURVEY
SUMMARY OF TREATMENT FACILITIES
NORTH POINT SEWERAGE DISTRICT

Type of Industry	No.	TOTAL G.P.D.	NO TREATMENT REQUIRED		PRESENT FACILITIES ADEQUATE		ADDITIONAL FACILITIES REQUIRED	
			No.	G.P.D.	No.	G.P.D.	No.	G.P.D.
Animal By-Products Processing	3	18,400			1	7,500	2	10,900
Battery Manufacturing	3	23,500					3	23,500
Bottle Washing	3	28,600					3	28,600
Bottling	18	294,800	4	120,200	9	77,400	5	97,200
Brewing & Malting	8	2,005,600			2	49,600	6	1,956,000
Cement & Stone Processing	12	37,200			2	3,300	10	33,900
Chemical Manufacturing	5	27,300	1	100	3	800	1	26,400
Dairy Products Processing	11	269,400			2	21,500	9	247,900
Dye Works	1	17,000					1	17,000
Electricity Generating	2	107,500					2	107,500
Fish Processing	10	67,100					10	67,100
Food Processing	58	627,200	7	28,600	11	35,600	40	563,000
Glass Processing	1	800			1	800		
Gas Manufacturing	1	600,000	1	600,000				
Glue Manufacturing	4	15,500						
Hide Selling	1	900			2	5,200	2	10,300
Ice Manufacturing	5	54,000	5	54,000			1	900
Laundering	27	1,570,000					27	1,570,000
Meat Processing	21	164,000			4	19,400	17	144,600
Metal Plating	11	85,700					11	85,700
Metal Processing	22	201,600	13	70,200	5	77,300	4	54,100
Oil Storage	2	11,000	1	300	1	10,700		
Paint Manufacturing	9	40,300	7	27,200	1	100	1	13,000
Paper Converting	2	800	2	800				
Pillow Manufacturing	1	3,000					1	3,000
Pharmaceutical Manufacturing	1	1,800					1	1,800
Photographing & Blueprinting	7	78,000	6	35,000			1	43,000
Printing & Lithographing	21	124,100	17	119,800	4	4,300		

SUMMARY OF TREATMENT FACILITIES (Cont'd)
NORTH POINT SEWERAGE DISTRICT

Type of Endustry	No.	TOTAL Gallons	NO TREATMENT REQUIRED		PRESENT FACILITIES ADEQUATE		ADDITIONAL FACILITIES REQUIRED	
			No.	G.P.D.	No.	G.P.D.	No.	G.P.D.
Poultry Killing & Dressing	6	41,000					6	41,000
Rubber Products Manufacturing	2	1,300	1	500			1	800
Rug Cleaning	2	23,100					2	23,100
Restaurant	1	3,500					1	3,500
Steam Cleaning & Washing	21	216,300	1	300	4	99,000	16	117,000
Steam Generating	3	7,600	3	7,600				
Swimming Pool	1	3,000	1	3,000				
Vegetable Oil Refining	1	3,000					1	3,000
Wholesale Florist	1	600			1	600		
Wool Scouring	1	54,000			1	54,000		
TOTAL	309	6,828,500	70	1,067,600	54	467,100	185	5,293,800



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ANNUAL REPORT
OF THE
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF
SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30, 1950



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ANNUAL REPORT
OF THE
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30, 1950

ELMER E. ROBINSON

MAYOR

THOMAS A. BROOKS

CHIEF ADMINISTRATIVE OFFICER

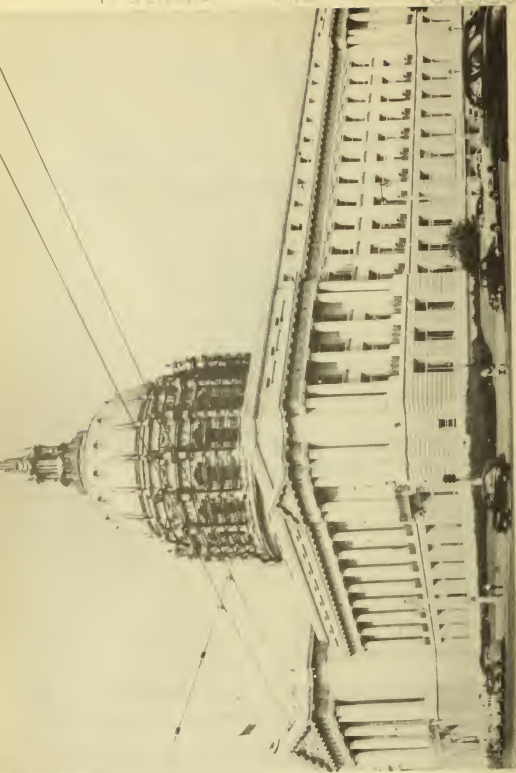
SHERMAN P. DUCKEL

DIRECTOR OF PUBLIC WORKS

P355.5

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1940/50



SAN FRANCISCO CITY HALL
dedicated in 1915

SSP

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MAYOR

ELMER E. ROBINSON

**CHIEF
ADMINISTRATIVE
OFFICER**

THOS. A. BROOKS

ORGANIZATION CHART

DEPARTMENT OF PUBLIC WORKS

JUNE 30, 1950

CITY AND COUNTY OF SAN FRANCISCO

DEPARTMENT OF PUBLIC WORKS

DIRECTOR SHERMAN P. DUCKEL

ASS'T DIRECTOR FRANK W. MCKENZIE
(Acting)

GENERAL OFFICE

BUREAU OF ENGINEERING
CITY ENGINEER RALPH G. WADSWORTH

BUREAU OF ARCHITECTURE
CITY ARCHITECT DODGE A. RIEDY

BUREAU OF BUILDING INSPECTION
SUPERINTENDENT (Acting) LESTER C. BUSH

BUREAU OF STREETS
GENERAL SUPERINTENDENT (Acting) W.S. MERRILL

BUREAU OF SEWER REPAIR
SUPERINTENDENT EMILE MUHEIM

BUREAU OF BUILDING REPAIR
SUPERINTENDENT (Acting) WALTER ZECHER

BUREAU OF ACCOUNTS
SUPERVISOR FRANK W. MCKENZIE

CENTRAL PERMIT BUREAU
SUPERVISOR SYLVAN J. ROSENBLUM

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS

OFFICE OF THE
DIRECTOR OF PUBLIC WORKS

November 1, 1950

250 CITY HALL
SAN FRANCISCO 2,
CALIFORNIA

Annual Report
1949-1950

The Honorable Thomas A. Brooks
Chief Administrative Officer
City and County of San Francisco

Dear Sir:

In accordance with the provisions of Section 20 of the Charter of the City and County of San Francisco, I am submitting the Annual Report of the Department of Public Works for the Fiscal Year ended June 30, 1950.

The writer has served as Director of this department since February 1, 1950, at which time Mr. Harry C. Vensano resigned as Director to return to the practice of Consulting Engineering. Mr. Vensano had served the City faithfully and well since October 1, 1942. Also, on February 1, 1950, Mr. S. J. Hester retired as Assistant Director after serving 38 years in this department. Mr. Hester's long experience and his great ability added materially to the efficient operation of this department. Mr. Frank W. McKenzie has served as Assistant Director since February 1, 1950.

During the Fiscal Year 1949-1950 the work of the Department of Public Works continued to increase in both volume and importance following the general trend which has been apparent since the close of World War II. In addition to the normal increases in the regular routine work of the department a large volume of planning and construction work has been undertaken. This is indicated by the large school and building construction program now being handled by the Bureau of Architecture and the expanded sewage treatment plant, sewer and highway construction program under the Bureau of Engineering.

The various functions of the Department are performed by eight separate bureaus and a general office division as indicated in the accompanying organization chart. The personnel of the Department at the end of the fiscal year consisted of 1428 employees of which 1319 were permanent employees and 109 temporary employees.

General offices of this department and the Design and Supervisory Bureaus located in the City Hall, but recent expansion of staffs of the Bureaus of Engineering and Architecture have required the establishment of branch offices in a temporary building at 45 Hyde Street.

All Maintenance Bureaus are centered in temporary quarters at 11th and Bryant Streets adjoining the Asphalt Plant. These quarters, in use since 1906, have long been inadequate and will be abandoned some time next year when the new Public Works yard now under construction on Army Street near DeHaro Street is completed.

During the Fiscal Year the Bureau of Engineering, with the assistance of outside consultants, issued plans and specifications for the remaining units of the Sewage Treatment Plant program and all contracts were awarded. A total value of Treatment Plants under way at the present time is over \$15,000,000. When these plants and the necessary collecting sewers are completed there will be no further discharge of raw sewage, originating in San Francisco, onto any part of the City's shoreline.

Important street projects undertaken during the year included the Broadway Tunnel, which will run from Powell Street to Polk Street and the spectacular overpass at the intersection of Alemany and Junipero Serra Boulevards. The track removal program was continued at a rapid rate and by the end of the fiscal year approximately half of the project street mileage had been cleared of abandoned tracks and repaved from curb to curb. The Third Street Bridge at Islais Creek was completed and put into operation on March 3, 1950.

The Bureau of Architecture is now handling a greater volume of work than ever before. In addition to reviewing and approving all plans and specifications for Public Buildings designed by outside architects, it is also responsible for the inspection of the construction of the same.

By far, the greater portion of this work is being performed for the Board of Education under the 1948 School Bond Issue. At the end of the fiscal year approximately \$4,000,000 of new school construction was under way. In addition, plans are now being prepared by architectural firms for 25 new school buildings estimated to cost \$22,000,000; two fire stations to cost \$400,000; and four libraries to cost \$484,000.

The Bureau of Building Inspection, which supervises private building construction in the City, was expanded during the year by the incorporation of the Electrical Inspector unit of the Department of Electricity. This brought the total staff of this bureau up to 52 persons. The total estimated cost of buildings investigated was \$57,400,000, which would have exceeded both of the preceding years had it not been for two large private housing projects which were approved last year. A total of 9,340 buildings permits were approved while 18,756 electrical permits were issued during the fiscal year.

Consideration is being given to the many suggestions for revision of the Building Code. Some highly controversial matters, such as the lateral force provisions for new buildings, must be decided and it is intended to take them up later in the year.

The Maintenance Bureaus responsible for the operation and maintenance of streets and sewers continued to operate on an efficient manner with only nominal additions to personnel and equipment in spite of the continued increase in street and sewer mileage.

The Bureau of Building Maintenance continued in the maintenance and repair, and the making of small building alterations in all City-owned buildings. Approximately 70 per cent of the work performed is done for, and at the expense of the Board of Education. Building maintenance and repair work is also performed for all City departments under work order procedure.

Considerable overtime work is required of the traffic striping crews. Because of heavy traffic in the down town area a large number of these streets can only be paint-striped on Sundays.

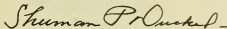
The Central Permit Bureau responsible for the issuance of all types of permits has reported a 14 per cent increase in the number of permits issued last year. During the fiscal year 27,143 permits of all types were issued.

The Bureau of Accounts continued to handle all budgeting and financial activities of the department. These include payroll procedures, personnel records, inventories, gasoline taxes, bond issue expenditures, etc.

All instructions issued by Mayor Robinson as Commander of the San Francisco Disaster Council and Corps, relative to the reactivating of Public Works Service, have been carried out. All personnel have received written instructions as to their duties in the event of a disaster. In addition, through agreement with the Recreation and Park Department, an Assistant Chief has been assigned from that department to cooperate with the Department of Public Works and to organize the Recreation and Park Department personnel to act as an integral part of our Public Works Service.

As Director of the Department of Public Works, I believe that all bureaus have performed their functions in a very fine manner. The additional volume of planning and construction undertaken by the department has been handled most expeditiously with a minimum increase in departmental employments.

Very truly yours,

A handwritten signature in cursive script, reading "Sherman P. Duckel". The signature is written in dark ink and is positioned above the typed name.

Sherman P. Duckel, Director
Department of Public Works

BUREAU OF ENGINEERING

DEPARTMENT OF PUBLIC WORKS

ORGANIZATION CHART

JUNE 30, 1950

CITY ENGINEER
ASST CITY ENGINEER

STAFF DIVISIONS

ADMINISTRATION
CONTRACTS-PERSONNEL
PURCHASING

PROGRAMS & BUDGETS
STATE AID - PLANNING
PROGRAMS

LINE DIVISIONS

DIVISION OF STREETS & HIGHWAYS

- 1-STREET IMPROVEMENTS
 - (a) ASSESSMENTS
 - (b) PERMITS & INSPECTIONS
- 2-HIGHWAYS
- 3-TRACK REMOVAL CONTRACTS
- 4-PLANS & RECORDS

DIVISION OF DESIGN

- 1-STRUCTURAL
- 2-SEWERS
- 3-SEWAGE DISPOSAL &
MECHANICAL
- 4-ELECTRICAL
- 5-UNDERGROUND STRUCTURES
- 6-ADMINISTRATIVE & CONTRACTS
- 7-SPECIFICATIONS

LINE DIVISIONS

DIVISION OF TRAFFIC ENGINEERING

- 1-DESIGN
- 2-OPERATION
- 3-MAINTENANCE

DIVISION OF SURVEYS & MAPPING

- 1-STREET GRADES
- 2-SUBDIVISIONS
- 3-SURVEYS

LINE DIVISIONS

DIVISION OF CONSTRUCTION

- 1-INSPECTION
- 2-TESTING LABORATORY
- 3-SANITARY FILL
- 4-RECORDS REPORTS

DIVISION OF SEWAGE & WASTE TREATMENT

- 1-RICHMOND SUNSET PLANT
- 2-NORTH POINT PLANT
- 3-SOUTHEAST PLANT
- 4-INVESTIGATIONS

BUREAU OF ENGINEERING
Ralph G. Wadsworth, City Engineer

FUNCTIONS OF THE BUREAU

The work of the Bureau of Engineering is primarily concerned with highways, boulevards, streets, bridges, viaducts, sewers, sewage disposal, and operation of the Richmond-Sunset Sewage Treatment Plant. In connection with all major improvements carried out by the Department of Public Works, except those relating to public buildings, the Bureau of Engineering prepares plans and specifications and supervises construction in the field. The Bureau also performs many continuing functions related to street improvements, traffic control, street name signs, spur tracks, sidewalks, structures, auxiliary water supply system, garbage disposal, surveys, subdivisions, and maintenance of maps and records for public information. A more detailed listing of these functions will be found under the heading "Functions of Divisions and Sections."

GENERAL REVIEW OF YEAR'S WORK

GENERAL

Throughout the fiscal year 1949-50, all divisions of the bureau were hard pressed to keep up with a heavy program of surveys, design and construction supervision. During the first half of the year, major attention was given to construction projects financed by recently approved bond issues including the Broadway Tunnel and additional sewage treatment plants. Later in the year it became possible to undertake a number of highly desirable street widening and resurfacing jobs already financed from gas tax revenues but previously deferred because of the bond project program.

The street-car track removal program continued on schedule and by the end of the year the five-year project was half finished. New type street signs were installed at 1147 intersections in the southwesterly portion of the city. Parking meter installations were nearly doubled bringing the total to 8,325. Traffic signals were installed at 87 locations. Street improvement work paid for by property owners continued at a high level. An important grade separation project and four street widening projects were undertaken. The new bascule bridge across Islais Creek was completed and opened to traffic on March 3, 1950.

Six construction contracts covering the new sewage treatment plants and aggregating \$16,000,000, including one awarded last year, called for large expenditures of time on the part of field and office staffs in setting lines and grades, inspecting workmanship, checking quality of materials, detailing necessary plan changes, authorizing modifications and maintaining essential records. Much of this work on two of the major contracts was performed by the staff of Clyde C. Kennedy, Consulting Engineer, who had previously prepared the plans and specifications under an engineering contract with the City.

CONTRACT VOLUME

A new record was set for value of contracts awarded, the total being over \$19,000,000. The number of contracts awarded and street improvements authorized was 3% less than during the preceding year but the aggregate value was 21% greater. Contractors' expenditures on contracts under way during the year amounted to nearly \$13,000,000, which was 74% greater than during the year before.

MAJOR PROJECTS STARTED

Among the more important projects undertaken during the year were the following:

- North Point Influent and Effluent Sewers
- Cross Town Sludge Force Main
- Sludge Treatment Plant
- Southeast Sewage Treatment Plant
- Lake Merced Tunnel (Sec. B) under Parkmerced
- Lake Street Sewer (Sec. C-1)
- Track Removal and Street Reconstruction (8 contracts)
- Street Resurfacing, 12.5 miles (7 contracts)
- Street Widening, 1.56 miles (4 contracts)
- Broadway Tunnel
- Alemaný Boulevard Overpass at Junipero Serra Boulevard

STATUS OF BOND FUNDS

A large part of the construction work done during the past five years has been financed by bond issues authorized in 1944, 1947 and 1948. The balances still available on June 30, 1950 were as follows:

Sewer Bonds of 1944	\$ 3,483,239.78
Street Improvement Bonds of 1947	12,593,646.03
Sewage Treatment Bonds of 1948	6,343,570.06

CURRENT CONTRACT DATA

The following tabulation shows the number and value of contracts awarded during the fiscal year 1949-1950 in each of the main categories of construction work. The tabulation also shows in the last column the total value of the work actually performed during the year on all contracts which were active, including those awarded in the preceding year. From this tabulation it will be noted that 139 contracts were undertaken having an aggregate value of \$19,164,306.30, and that the value of the work actually performed on the contracts under way was \$12,796,435.57.

A detailed listing of the contracts under way during the year will be found in Appendix I. A separate tabulation is given for each of the categories of construction work, the various tables being designated by the letters and figures shown in the first column of the following summary.

SUMMARY
SHOWING ALL CONTRACT WORK AWARDED OR
UNDER WAY
July 1, 1949 to June 30, 1950

Table	Type of Construction	No.	Contracts Awarded 1949 - 1950 Aggregate Value	Amount Expended During Fiscal Year 1949-1950
A	Major Thoroughfares	5	\$ 393,149.40	\$ 175,844.95
B-1	Streets - Private Contracts	35	352,954.00	461,940.00
B-2	Streets - Assessment Proceedings	26	177,199.26	256,703.43
B-3	Streets - Public Con- tracts - City Pay	15	127,999.08	126,553.65
B-4	Street Car Track Removal	8	2,040,342.98	1,555,505.05
C	Traffic Signals and Channelization	8	313,707.62	373,377.64
D-1	Sewers, Pipe, Vitri- fied Clay & Concrete	19	482,894.44	481,924.11
D-2	Sewers, Concrete (Monolithic)	4	1,557,196.65	1,787,558.47
E-1	Sewage Treatment Plants	5	8,055,967.68	6,174,615.88
E-2	Miscellaneous	14	5,662,895.19	1,402,412.39
TOTALS - Awarded and Expended		139	\$19,164,306.30	\$12,796,435.57

ADMINISTRATION

The staff of the Bureau of Engineering is divided into eight divisions under the City Engineer, assisted by the Assistant City Engineer, who also acts as head of one of the major divisions. The organization plan as it existed on June 30, 1950 is shown on the accompanying chart. The principal changes which took place during the year were the elevation of Traffic Engineering to the status of a division and the establishment of a Division of Sewage and Waste Treatment. The latter will supervise the operation of the Richmond-Sunset Sewage Treatment Plant and next year will take over the new plants now under construction. Supervision of the sewage pumping stations was transferred to the Bureau of Sewer Repair of the Department on April 1, 1950 and at the same time supervision of the Richmond-Sunset Plant was transferred back from the Bureau of Sewer Repair to the Bureau of Engineering.

FUNCTIONS OF DIVISIONS AND SECTIONS

The duties performed by the various divisions and sections making up the Bureau are briefly summarized in the following outline, which also shows the name and rank of the person who was in charge of each unit on June 30, 1950.

DIVISION OF STREETS AND HIGHWAYS-C. J. Geertz, Asst. City Engineer

Street Improvement Section M. H. Levy, Engineer

Assessment and Permit Unit L. C. Whaley, Asst. Engr.

Permits for original street improvements and spur tracks

Proceedings for street improvement and assessment of benefits

Plans for sidewalk changes and street maintenance

Reports on franchises and permits

Permit and Inspection Unit C. S. Hiden, Asst. Engr.

Inspection of condition and use of streets and sidewalks

Notification of parties responsible for repair or adjustment

Recommendations on various permit applications

Permits for street excavations and inspection of work

Investigation of claims for damages due to condition of streets or sidewalks

Highway Section N. F. Newman, Engineer

Design of major thoroughfares

Control of building permits on future rights of way

- Track Removal Section J. L. Slater, Engineer
Plans and specifications for removal of abandoned
street car tracks and reconstruction of streets
- Plan and Record Section H. L. Reinfeld, Engineer
Line and grade diagrams for street and sewer work per-
formed under private contract and assessment proceedings
Records of completed street work and sewer installations
- DIVISION OF DESIGN R. H. Owens, Senior Engineer
- Structural Section N. F. Yde, Engineer
Structural plans for all major projects
Records of surface and ground water conditions
and plans for stabilizing slide areas
Recommendations for maintenance of about
195 existing city-owned structures
- Sewer Section R. F. Lauenstein, Engineer
Plans for extension and reconstruction of
sewers and records of completed work
Investigation and recommendations on operation
and maintenance
Review of plans for sewer systems in new subdivisions
- Sewage Disposal and Mechanical Section M. Anaya, Engineer
Plans for sewage disposal plants & intercepting sewer
systems.
Plans and specifications for mechanical work on all
projects undertaken by the Department of Public Works,
and occasionally other departments.
Plans for modification or improvement of Auxiliary
Water Supply System
- Electrical Section Ivan Sandberg, Engineer
Plans and specifications for electrical work on
street lighting, traffic signal and sewage and
pumping station projects
Assists in field inspection of electrical construction
- Underground Structure Section W. R. Daly, Sr. Draftsman
Records of underground structures and foundation
conditions
Maps showing existing underground utilities in the
vicinity of contemplated improvements
Review of utility locations in new subdivisions

Specifications Section

E. J. Sierra, Engineer

Review, editing and assembly of plans and specifications

Administrative Section

G. Galli, Engineer

Planning and coordinating of work of the Division of Design

Supervision of reference files for bureau

Preparation of cost estimates

DIVISION OF TRAFFIC ENGINEERING

Ross T. Shoaf, Engineer

Reports and recommendations on traffic devices, channelization, parking & street railway facilities

Traffic surveys and records of traffic accidents

Supervision of traffic striping and installation of traffic signs, bus stops, safety zones, parking meters and street signs

Plans for temporary routing of traffic during construction of streets and sewers

Reports of damages to City property caused by traffic accidents

SURVEYS AND MAPPING DIVISION

E. J. Cullen, Engineer

Field surveys for the department and occasionally for other departments and private parties

Investigations and reports on property acquisition, street openings and closings, and streets in new subdivisions

Maintenance of official City maps and records regarding streets

CONSTRUCTION DIVISION

Fred D. Brown, Asst. Engr.

Field Engineering Unit

Supervision and inspection of contract work including layout as required

Annual inspection of structures under jurisdiction of department

Inspection of sanitary fill

Testing Laboratory Unit

P. F. Bernard, Engineering Chemist

Physical and mechanical tests of materials used by Department of Public Works and for several other departments

DIVISION OF SEWAGE AND WASTE TREATMENT - B. Benas, Senior Engineer

Operation and maintenance of treatment plants
 Studies and recommendations for improvements
 Surveys of shore conditions and industrial wastes

ADMINISTRATIVE DIVISION

L. Glick, Engineer

Contract administration and control, including progress payments and recommendation of acceptance
 Administrative work of the bureau, including budgets, personnel, pay-roll and office services

PROGRAMS AND BUDGETS DIVISION

A. V. Bowhay, Engineer

Preliminary material for annual budgets and long range programs
 Special studies of street, traffic, parking and transit problems
 Applications and claims for State Aid
 Project statements and records for gas tax projects

PERSONNEL

The staff of the Bureau increased from 246 to 287 during the year, a gain of 41 persons. The number of permanent employees was increased by 61, while the number of temporary employees showed a decrease of 20. As shown in the following table, the larger increases were made in the design, construction and survey divisions.

Personnel at Beginning and End of Fiscal Year

Division	July 1, 1949	June 30, 1950	Increase
Engineering Design and Administrative Divisions	118	131	13
Construction Div. (Field)	51	60	9
Survey Div. (Field & Office)	32	40	8
Clerical Staff	23	28	5
Plant Operation Force	22	28	6
Totals	246	287	41

The continued expansion of the construction program with the starting of work under several large contracts, necessitated increasing both the construction and survey staffs. The engineering design staff was augmented to turn out plans and specifications for the continuing program of track removal, street and highway improvements, and sewer construction and to handle the office work in connection with projects under construction.

For the past several years, many permanent and temporary positions were filled by emergency appointments as no civil service eligibles were available. During this fiscal year, qualified engineering personnel has been supplied by the Civil Service Commission as a result of a series of examinations covering nearly all engineering classifications. This accounts for the large gain in the number of permanent employees and resulting decrease in temporary employees.

The distribution of permanent and temporary employees between the principal divisions and according to grades is shown in the following table:

DISTRIBUTION OF PERSONNEL - June 30, 1950

Division and Grade	Permanent	Temporary	Total
Engineering Design and Administrative Divisions			
City Engineer	1		1
Assistant City Engineer	1		1
Senior Engineer	2		2
Engineer	15		15
Assistant Engineer II	24		24
Assistant Engineer I	9		9
Junior Engineer	14	7	21
Inspector Public Works Construction	4	2	6
Senior Draftsman	15		15
Draftsman	25	2	27
Junior Draftsman	5	4	9
Cartographer	1		1
Sub Total	116	15	131

Bureau of Engineering

17

Construction Division (Field)	Permanent	Temporary	Total
Engineer	1		1
Assistant Engineer II	7		7
Assistant Engineer I	8		8
Junior Engineer	30	5	35
Inspector Public Works Construction	4	3	7
Junior Draftsman	1		1
Engineering Chemist	1		1
Sub Total	52	8	60
Survey Division (Field & Office)			
Engineer	1		1
Assistant Engineer I	1		1
Junior Engineer	5		5
Draftsman		1	1
Chief of Party	6	2	8
Instrument Man	4	4	8
Surveyor's Field Assistant	7	9	16
Sub Total	24	16	40
Clerical Staff			
Clerks	6	1	7
Stenographers & Typists	13	5	18
Office Assistants	1	2	3
Sub Total	20	8	28
Plant Operation Force			
Sewage Treatment Plants	19	1	20
Pumping Stations	8		8
Sub Total	27	1	28
Total	239	48	287
Permanent Employees in Temporary Positions	5	-5	
Total Employees	244	43	287

TURNOVER

The turnover of employments was quite heavy during the year as evidenced by the fact that 223 requests for certification of employees were made, 62 of which were for permanent positions. With the establishment of lists of eligibles for the various engineering classifications and the replacement of the many emergency employees, it is anticipated that employee turnover will be greatly diminished.

PERSONNEL LOSSES

Five employees of the Bureau were retired after many years of meritorious service. In addition, the Bureau lost five valued employees through death.

Through Retirement	Classification	Length of City Service
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Ernest A. Garen	Chief of Party	35 years
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Michael J. Callaghan	Assistant Engineer II	35 years
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Thomas J. Keenan	Junior Engineer	26 years
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Ivan Flamm	Engineer	38 years
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Carl H. Stern	Engineer	37 years
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Cyril V. Patterson	Assistant Engineer II	30 years
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Through Death	Classification	Length of City Service
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William Anderson	Junior Engineer	18 years
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Llewellyn De Cew	Senior Engineer	21 years
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Stuart A. Grant	Junior Engineer	16 years
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Otis Gibson	Assistant Engineer II	13 years
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William T. Lundy	Junior Engineer	40 years
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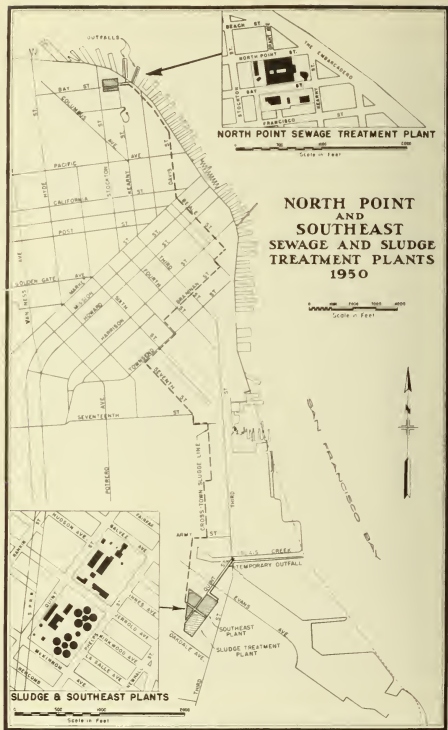
SEWAGE TREATMENT PLANT CONSTRUCTION

By the end of the fiscal year, all units of the new sewage treatment plants were under construction. Locations of the major units are shown on the accompanying map. Sewage from the portion of the city lying east of Twin Peaks will pass through either the North Point plant at the foot of Bay Street or the Southeast plant in the Islais Creek area. Sludge removed from the sewage at both of these plants will be disposed of through the Sludge Treatment plant also located on the Islais Creek site. The sludge from North Point will be transported to the sludge plant through a 6-mile force main. Much work remains to be done on the necessary sewage collecting systems.

NORTH POINT SEWAGE TREATMENT PLANT

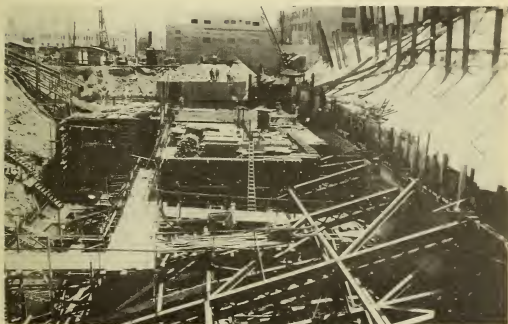
Work on this plant, which had begun on January 17, 1949 (Annual Report 1948-1949, page 38), included the structural completion of the Pretreatment Building, the Receiving Structure, Preaeration and Sedimentation Buildings Nos. 1 and 2, the Grease and Scum Building, the Sludge Control Building and the Post Chlorination Building and brought the overall completion of the plant from 10% to 63% during the year. Pile driving was completed on November 8, 1949 when a total of 68,300 feet of Raymond concrete piles, 2,981 feet of untreated wooden piles and 4,300 feet of creosoted piles had been driven. Concrete poured during the year amounted to 28,450 cubic yards. In the completed buildings, rapid progress was made with the installation of glass, ceramic tile and roofing, as well as indoor and outdoor piping, miscellaneous iron work, hoists and monorails, electrical conduits and wiring, the ventilation system fans and duct work, and other miscellaneous equipment and machinery.

As anticipated in last year's report, foundation conditions at the Administration and Sewage Lift Station Building and along the adjacent south property line of the site were less favorable than anticipated. On the basis of observed behavior and the advice of geologists as excavation progressed, several modifications of the building design were undertaken. As the underlying rock proved to be unsuitable for the uplift anchors contemplated and thickening of the base slab to provide equivalent weight seemed inadvisable, subdrains were placed under the sump and vertical relief pipes were extended through the slab and brought upward to a height above the maximum elevation of the operating water surface.





GENERAL VIEW
NORTH POINT SEWAGE TREATMENT PLANT



Excavation shoring for
Administration and Pump Station Building



SEDIMENTATION BUILDING



POST-CHLORINATION BUILDING

A second change was made at the request of the contractors because of the great difficulty they were encountering in supporting the ground along the south property line, the adjacent house on the east side of Grant Avenue having already been rendered uninhabitable due to settlement and displacement. The influent channel to the sump designated Channel No. 3, and that part of the structure south of the line designated Column Line 4 were eliminated and the influent channel relocated within the sump. In order to compensate for the loss of sump volume, the sump was extended 25 feet to the east and to the west. In addition, the design of the Building was modified to provide additional strength to resist the pressure on the south wall and an inclined reinforced concrete strut system was designed to give additional support to the vertical retaining wall on the south property line.

By the end of the year, about 70% of the foundation slab in the Administration Building had been poured and work was progressing in accordance with revised designs. Plans for the retaining wall, however, were being revised to provide an inclined stem in place of a vertical stem along the south property line. This change was made at the request of the Contractors under an agreement providing for the acquisition at their expense of the adjacent three lots, onto which the inclined wall will encroach.

NORTH POINT INFLUENT AND EFFLUENT SEWERS

The influent and effluent sewers serving the North Point Treatment Plant were started under a contract which was awarded to Chas. L. Harney, Inc. on October 26, 1949 for \$1,039,903.00. Subsequently the contract was assigned to Chas. L. Harney, Inc. and Ben C. Gerwick Co., joint venturers. By the end of the year, the job was 30% completed. The Gate Well and Taper Structure at the Sewage Plant Post Chlorination Building, the 6'-3" Influent Sewer from the North Point Main, and the 3' x 4'-6" Influent Sewer from Beach Street were about 90% completed. A start was made on the construction of the 8' Effluent Sewer and some invert and arch were poured. Under Piers 33 and 35, the structural steel supports for the 4' outfall pipes were about 90% completed and a small portion of the pipe was in place under Pier 33. Some delay was caused by a modification of the design of the supports under the piers, which was made in part at the Contractors' request to facilitate construction and in part at the State Harbor Board's request for more rigid supports to resist heavier wave forces than contemplated in the original design. Construction work in the Embarcadero was somewhat impeded by the arrangements necessary to accommodate the heavy flow of vehicular traffic.

SOUTHEAST SEWAGE TREATMENT PLANT

The Southeast Sewage Treatment Plant designed by Clyde C. Kennedy, Consulting Engineer, is located in a three-block area between Phelps and Quint Streets running from Galvez Street to Jerrold Avenue. This plant will treat the sewage from that portion of the Southeast Sewerage District not tributary to the North Point Main Sewer. The plant is designed for an average sanitary flow of 30 mgd with peak flows of 70 mgd during light rains. The chlorinated effluent will discharge into Islais Creek and the sludge will be pumped across Jerrold Avenue to the Sludge Treatment Plant on an adjoining site.

The plant consists essentially of the following:

Headworks Building - 65' x 180' x 65' maximum height, housing influent flow control gates, 2 hand and mechanically cleaned bar screens, 2 mechanically cleaned grit tanks and the raw sewage pump sump and sewage lift pumps.

Sedimentation Tanks - 2 buildings each with 2 aeration sedimentation tanks 38' wide by 260' long and 10' deep equipped with plate aerators and straight line collectors carrying sludge to the discharge end of the tanks. The tanks will be housed in a concrete structure with roof 14' above the walkways.

Sludge Control Building - a two-story building 30' x 55' housing sludge wells and sludge pumps and the return elutriation overflow sumps and elutriation pumps. The elutriation overflow is received from the Sludge Treatment Plant.

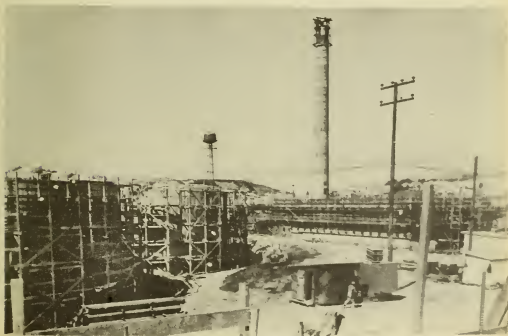
Chlorination Building - a one-story building housing chlorinators for pre and post-chlorination with outside storage tanks for carload deliveries.

Electrical Substation & Transformer Room - a one-story building 16' x 24' adjoining an outside fenced concrete pad for the transformers.

The contract for construction of the plant was awarded on January 18, 1950 to the Walsh Construction Co., Bates & Rogers Construction Corp., J. H. Pomeroy & Co., Inc., Joint Venture for \$2,131,118. Construction started on March 13, 1950 with 500 days allowed for completion. As of July 1, 1950, 22.1 percent of the work was completed of which 2 percent was mechanical and electrical work and the balance structural. The site has been cleared, most of the structural excavation completed, 70 percent of the wood piles driven and all of the structures started.



AIRPLANE VIEW - ISLAIS CREEK AREA
Sludge Plant in right center
Southeast Plant in lower left



SLUDGE TREATMENT PLANT



DIGESTION TANKS



SOUTHEAST TREATMENT PLANT

The Headworks Building was constructed on sand in open cut and without piles. The water table was lowered below the excavation by 4 deep wells outside the corners of the structure and all work was done in the dry. The lowest point of this heavy structure designed to resist uplift is 42' below finished ground level.

SLUDGE TREATMENT PLANT

The Sludge Treatment Plant designed by Clyde C. Kennedy, Consulting Engineer, is located south of Jerrold Avenue between Phelps and Quint Streets. It will treat the pumped sludges from the North Point and Southeast Sewage Treatment Plants and the trucked filter cake from the Richmond-Sunset Sewage Treatment Plant. These three plants have design capacities of 65, 30 and 20 mgd, respectively. Treatment will consist of thickening of raw sludge, digestion, elutration, vacuum filtration, and heat drying of filter cake to produce a dried sludge with approximately 8 percent moisture available for sale as a fertilizer base or soil conditioner. The plant consists essentially of the following:

Administration Building housing offices, laboratory, and shower and locker rooms, etc., 50' x 175', three stories.

Machine Shop and Garage - 60' x 95', one story.

Digesters - 10, each 100' in diameter and 33' high with steel floating covers, in 2 groups of 5 each (3 primaries and 2 secondaries).

Gas Holder - 56' in diameter and 20' high with steel gas holder cover.

Digestion Control Buildings - 2 each 70' octagonal, two stories, housing sludge pumps and external heat exchangers.

Receiving and Thickening Building - 63' x 124', two stories, housing 2 receiving and thickening tanks approximately 21' by 91' by 12' deep and sludge pumps.

Filtration Building - 99' x 154', two stories, housing 4 primary and 4 secondary elutration tanks approximately 16' x 61' x 11' deep, sludge pumps, four 8' diameter by 14' long vacuum filters and appurtenant equipment.

Dryer Building - 197' x 54', three stories, housing 3 Raymond Dryers rated at 6250 lbs. of water per hour and dried sludge storage and sacking equipment.

Miscellaneous -

Electric Substation and Filter Cake Receiver - 25' x 115' one story.

Elevated Water Tank - 15,000 gallon capacity.

Chimney - 200' high reinforced concrete, double shell, 11' minimum diameter.

The contract for construction of this plant was awarded to MacDonald, Young and Nelson, Inc. and Morrison-Knudsen Co., Joint Venturers on August 26, 1950 for \$4,486,000. Work started on October 27, 1950 with the time of completion scheduled for 600 calendar days from that date. As of July 1, 1950, 36.7 percent of the contract had been completed, of which 3 percent was mechanical and electrical work and the balance, structural.

During the fiscal year, the site was cleared, practically all of the excavation completed, 33,000 lineal feet of Raymond and 10,000 lineal feet of pre-cast piles driven, all of the concrete work completed on the digesters, and all of the other structures partly completed.

The digesters are of pre-stressed construction with round steel bands covered by $3\frac{1}{4}$ inches of gunite. Each digester was poured in 10 alternate sections using plywood forms held in place on the outside by timber framing and on the inside of metal braces attached to plates bolted to the concrete floor slab. The concrete was poured in 4' lifts, using specially designed elephant trunks fed from buggies on a runway around the top of the tank. All of the vertical joints were treated with iron dust and cement. The steel bands were supported in position by notched steel plates set in the concrete at 22 locations equally spaced around the circumference.

SLUDGE FORCE MAIN

The Sludge Force Main will convey the organic matter such as sludge, grease and scum, which has been separated from the liquid sewage at the North Point Sewage Treatment Plant, to the Sludge Treatment Plant for final disposal. It runs in a southerly direction along various streets to Army Street and thence along the Southern Pacific right-of-way as shown on the accompanying map, a total distance of approximately 31,310 feet or 5.93 miles.

The main consists of a 10-inch concrete cylinder pipe in 30-foot lengths with bell and spigot joints. In the line there are four blow-off vaults and six drain and clean-out vaults. Each vault has a 2" blow-off connection for cleaning the line and a pressure gauge to indicate its operating condition. In addition, each drain and clean-out vault has facilities to drain the contents of the line into a nearby sewer in case of an emergency.

The sludge will be pumped through the force main by two horizontal, heavy duty, non clog type, motor driven, centrifugal pumps located in the Sludge Control Building at the North Point Sewage Treatment Plant. Each of these pumps is capable of delivering 1,000 g.p.m. against a dynamic head of 203 feet or 700

g.p.m. against a head of 90 feet, the velocities being 4.08 and 2.86 feet per second respectively. If operating in series these pumps are capable of delivering 1,400 g.p.m. against a total dynamic head of 380 feet with a velocity through the main of 5.7 feet per second.

The installation of the main was complete at the end of the year except for certain piping and connections in the vaults.

SOUTHEAST SEWAGE COLLECTING SYSTEM

The preliminary plan for the collecting sewers in the Southeast Sewerage District as described on page 41 of last year's report has been extensively revised due to the Southern Pacific Company's objection to the placing of a sewage force main in one of their railroad tunnels. The new plan contemplates two main collecting systems designated the West and East influent systems.

West Influent System

The West Influent System will collect the sewage originating in areas lying in general to the west and north of the sewage treatment plant. It will intercept the present flow into the bay at the Mariposa Street, Third Street, Selby Street and Marin Street outfalls. The drainage areas are defined in paragraphs (1) and (2) on page 41 of the 1948-49 Annual Report. The main units of the system will be as follows:

West Influent Interceptor:	5'-6" diameter,	2700 ft. long.		
West Shore Interceptor:	42" "	450 "	"	"
North Shore Interceptor:	24" "	2500 "	"	"
Mariposa Force Main	15" "	3500 "	"	"
Mariposa Pumping Station				
Diversion structures at four outfalls				

Preliminary estimates indicate that the total cost will be about \$1,000,000.

East Influent System

The East Influent System will collect the sewage from areas lying generally to the east and south of the sewage treatment plant. It will intercept the present flow into the bay at the Evans, Palou, Ycsemite, Candlestick and Sunnydale outfalls. The drainage areas are defined in paragraphs (3) and (4) on page 41 of

last year's report. The main units of the system will be as follows:

East Influent Interceptor:	4'-3" diameter,	5000 ft. long.		
Hunter's Point Sewer:	4'-0" "	1300 "	"	"
Hunter's Point Tunnel:	4'x6' egg shape	2000 "	"	"
Yosemite Force Main:	21" diameter,	1200 "	"	"
Yosemite Pumping Station				
Ingalls St. Interceptor:	30" "	1600 "	"	"
Candlestick Hill Tunnel	4'x6' egg shape	3600 "	"	"
Candlestick Dr. Interceptor:	27" diameter,	1500 "	"	"
Diversion structures at five outfalls				

Preliminary estimates indicate that the total cost will be about \$2,000,000.

SEWERS

Twenty-three sewer construction contracts were awarded aggregating over \$2,000,000 as shown in Tables D-1 and D-2 of Appendix I. A wide variety of construction types were included running from small pipe sewers to a large concrete-lined tunnel. In addition to the contracts listed, several sewers were reconstructed or relocated in connection with other types of projects such as the Broadway Tunnel and the track removal program.

LAKE STREET SEWER SYSTEM

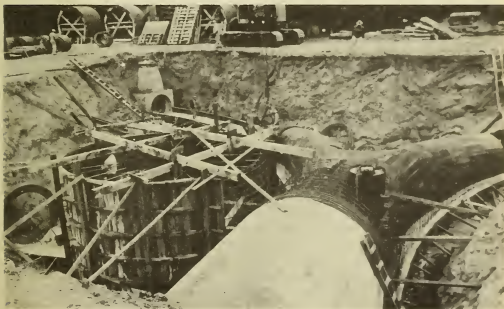
Work was continued on the design and construction of the Lake Street Sewer System which was described in the Annual Report for 1948-1949, page 35.

Section "B", on Lake St. from 17th Avenue to 8th Avenue, was completed. Construction started on Section "C-1", which extends on 8th Avenue from Lake Street to California Street, on California and Cornwall Streets from 8th Avenue to Arguello Boulevard and thence on Arguello Boulevard to Geary Boulevard.

Section "C-1" is of centrifugally spun reinforced concrete pipe with guniting inside joints. Monolithic concrete sewer construction is used on curves and at junctions. The project consists of 4400 feet of 7'-6", 6'-0", 5'-3", 4'-0" and 2'-6" concrete pipe and 180 feet of monolithic concrete sewer 7'-6", 6'-0" and 4'-0" in diameter. The contract included track removal work on Cornwall Street and Arguello Boulevard. This section of sewer will, in particular, relieve the overloaded Geary Boulevard Sewer west of Arguello Boulevard.



LAKE MERCED SEWER SECTION "C"
Lake Crossing



LAKE MERCED SEWER SECTION "B"
Tunnel under construction

A contract designated Lake Street Sewer, Section "A" Contract #2 provided for the extension of the outlet of the Lake Street system along the bed of Lobos Creek in the Presidio. The project consisted of 290 feet of 7'-0" and 5'-0" centrifugally spun concrete pipe sewer. This extension was found necessary to prevent scour in the Lobos Creek channel with attendant damage to adjacent property. A further extension of the outlet towards the Ocean beach is contemplated.

LAKE MERCED SYSTEM

Section "C" of this storm drainage system including the structure crossing the southerly arm of Lake Merced was completed and Section "B" extending northerly to connect with the previously constructed Section "A" was started.

Section "B" consists of 1400 feet of sewer in open cut and 3600 feet of tunnel under the Park Merced Housing Development. The finished section is of horseshoe shape 10' wide and 11'-3" high, the same as the Section "D" tunnel under Fort Funston. The open cut section was constructed in dry sand and clay without the use of trench lagging. The tunnel was driven from the south portal initially. The excavation was dry for a short distance but became wet as the work progressed. The portal at the north end of the tunnel was opened early in 1950. For most of the tunnel length the natural ground water level was well above the crown of the tunnel and it was necessary to sink a series of nine wells from the ground surface, install pumps, and by practically continuous pumping lower the ground water level below invert grade.

At the end of the fiscal year the open cut sections were completed except for the connections at the tunnel portals and 2083 feet of tunnel had been excavated.

DIVERSION WEIR: THIRD STREET SOUTH OF ISLAIS CREEK

While Third Street was closed to traffic for construction of the new Islais Creek Bridge, a diversion weir was constructed in Third Street, south of the Islais Creek Channel. This reinforced concrete structure is 82 feet long supported on creosoted timber piles. It will divert the sanitary flow in the Third Street sewer to the Southeast Sewage Treatment Plant. The weir crest at Elev. -3.0 prevents back-flow at high tides. An innovation was the placing of hinged tide gates in the weir wall at lower high tide level (Elev. -5.5) to permit earlier discharge of waters during storms and to reduce the pressure levels in the sewer.

PHELAN AVENUE SEWER

The existing 12" sewers in Phelan Avenue, between Judson Avenue and Ocean Avenue and in Ocean Avenue between Phelan Avenue and Harold Avenue, were enlarged to take care of new developments such as the Riordan High School and the planned enlargement of the San Francisco City College. This sewer will also alleviate flooding conditions at Hazelwood and Greenwood Avenues when the second unit is constructed in the future. It consists of 1800 feet of 30" diameter centrifugally spun reinforced concrete pipe and 250 feet of 3'-0" x 4'-6" monolithic concrete sewer, the latter being in Ocean Avenue.

The second unit will consist of another block of sewer enlargement in Ocean Avenue from Harold to Lee Avenues and one block in Judson Avenue from Phelan Avenue to Hazelwood Avenue.

JACKSON STREET: BATTERY TO DRUMM STREETS

The sewer in Jackson Street from Battery to Drumm Streets is a portion of an important overflow sewer from the North Point Main in Sansome Street. The old 3' by 5' brick sewer, constructed in 1876 was in poor condition because of subsidence and was too small for its present purpose. To enlarge the capacity from approximately 80 to 155 cu. ft. per second, a contract was awarded for 1075 feet of 5'-6" diameter reinforced sewer on timber piles. Removal of abandoned streetcar tracks was included in the sewer contract. Tests made by the Contractor indicate that some of the piles, near Drumm Street, may be driven as deep as 110 feet below the bottom of the sewer.

SEVENTH STREET SEWER AT CHANNEL

The sewer in 7th Street, flowing northwesterly to Channel Street turns northeasterly under the Southern Pacific main line railroad tracks and discharges through a wood box outlet into the channel. In order to eliminate timber construction under a main line railroad and to simplify the future collection of sewage and conveyance to a treatment plant, work was started on an extension of this sewer along 7th Street to a junction with the Division Street outfall. The project consists of 280 feet of 3'-0" x 4'-6" reinforced concrete sewer supported on creosoted timber piles.

STORM WATER INLETS IN EL CAMINO DEL MAR

In order to relieve flooding conditions in El Camino Del Mar between Lake Street and Sea Cliff Avenue, special storm water inlets with an outlet pipe to the Ocean were installed in El Camino Del Mar west of 32nd Avenue at the easterly boundary of Lincoln Park.

SEWERS REPLACED UNDER TRACK REMOVAL CONTRACTS

Replacement of old pipe sewers in poor condition was included in track removal contracts in the following blocks:

Mission Street: College Avenue to St. Mary's Avenue
Bryant Street: 25th to 26th Streets
Sutter Street: Van Ness Avenue to Gough Street and
a connection at Sansome Street

Inspection of Old Cement Pipe Sewer on Bryant Street

The specifications for replacing the pipe sewer in Bryant Street provided for hand excavation near the bottom of the trench and careful removal and inspection of the old sewer pipe which was known to have been installed in 1879. This block of sewer was selected for inspection because it had a record of 10 repairs in the last 10 years.

Inspection of 5 lengths of pipe removed from the trench intact revealed the following facts.

1) The pipe was 16 inches in diameter and 2" thick made of cement concrete using a fine gravel aggregate and hand tamped in molds.

2) The invert, covered with a black asphaltic deposit, was worn so as to expose the pebbles of the aggregate about 1/8 inch.

3) The sides and top of the interior were worn or disintegrated considerably more, showing general loss of mortar of 1/8 inch to 1/4 inch and, in some cases, 3/8 inch.

4) Joints were tongue and groove and showed no evidence that mortar was used in joining the pipes.

5) Holes for side sewers were precast, bevelled, and 8 1/4 inches in diameter.

6) The sewer was physically intact.

BROADWAY TUNNEL SEWERS

Work is in progress, under the contract for the Broadway Tunnel, for re-routing and enlarging sewers, and constructing additional service lines necessitated by the approach cuts at the tunnel portals. The sewer work will amount to about \$105,000. Included is a new 3'-0" x 4'-6" concrete sewer on a smooth curve from the Broadway sewer into the Polk Street sewer which will eliminate the flooding which has occurred at this intersection in the past.

BAYSHORE FREEWAY SEWERS

Construction of the Bayshore Freeway by the State Division of Highways required numerous rearrangements of the City's sewer system. In the case of new major concrete sewers such as those in Kansas and Vermont Streets from 22nd Street to Army Street, and in Bayshore Boulevard from Augusta Street to Industrial Street, preliminary designs prepared by the Bureau of Engineering were incorporated in the State's plans. All State plans for sewer construction were reviewed and checked for conformance with City requirements.

STREET IMPROVEMENTS - CITY FINANCED

Street improvements undertaken during the year included widening and channelizing of traffic arteries, removal of abandoned streetcar tracks, resurfacing of old pavements, construction of a twin bore tunnel and a major over-pass structure and a number of minor street improvements in front of city owned property. Altogether 32 contracts were awarded totaling \$8,108,018.81 using principally bond proceeds and gas tax funds. The various contracts are listed in Appendix I, Tables A, B-3, B-4 and E-2.

STREET WIDENING PROJECTS

Three street widening projects financed with gas tax funds were started during the year.

Army Street

Construction work on Army Street between South Van Ness Avenue and Guerrero Street was started in August 1949 and completed in February 1950. The contract cost was \$157,594.95. This completes the project from Potrero Avenue to Guerrero Street which was started several years ago, but was delayed because of the continued housing shortage. The street was widened from 64 feet to 100 feet providing two 38 foot roadways separated by a medial strip 4 feet wide.

Woodside Avenue

Construction work on Woodside Avenue between Portola Drive and Idora Ave. was started in May 1950 and is expected to be completed in October 1950 at an estimated contract cost of \$59,000. This contract is a portion of the project for widening Woodside Avenue from Portola Drive to Laguna Honda Boulevard. The street is being widened from 50 feet to 80 feet so as to provide a 60 foot roadway and two 10 foot sidewalks.

Judah Street

The widening of the roadway of Judah Street, from 25th Ave. to 36th Avenue is typical of a local improvement undertaken by the City. To relieve traffic congestion through a business district the roadway is being widened by setting back the curbs 3 feet on each side. This will provide space for a traffic lane on each side of the existing streetcar tracks.

CHANNELIZATION PROJECTS

Alemaný Boulevard from Mission Street to San Jose Avenue was improved by constructing a medial divider with appurtenant safety lighting and traffic signals at the important crossings. A later contract awarded but not started provides for the re-paving and channelizing of a portion of the same boulevard running westerly about 1800 feet from Crescent Avenue. The completion of this work together with minor reconstruction to be done in connection with the new viaduct at the Mission Street crossing will make Alemany Boulevard a six-lane divided highway from San Jose Avenue to the new Bayshore Freeway being constructed by the State.

A smaller channelization job was started to control traffic at the Randall Street crossing of Bernal Avenue. The work was undertaken at this time to facilitate the heavy volume of traffic to be detoured during construction of the Mission Street Viaduct. It will become a part of the project for the widening of Guerrero Street and San Jose Avenue which will probably be started in 1951.

RESURFACING PROJECTS

Seven street resurfacing contracts were awarded between July 1, 1949 and June 30, 1950 aggregating \$212,820.46 and providing for the improvement of 12.5 miles of heavily traveled streets as listed in Appendix I, Tables A and B-3. One of these contracts, awarded under the name of Bush Street and Other Streets for \$121,731.00 is the largest street resurfacing contract ever awarded by the Department of Public Works. It calls for the placing of approximately 20,700 tons of asphaltic-concrete in a new 1 $\frac{1}{4}$ " wearing surface over the existing roadway of several major thoroughfares totaling about 7.5 miles.

TRACK REMOVAL PROGRAM

By the end of the fiscal year the track removal program financed by the Street Improvement Bond Issue of November 1947 was about half completed. This program, scheduled for completion in a five-year period, was started in January 1948 and half of the program time had elapsed by July 1, 1950.

The program is intended to include the removal of abandoned streetcar tracks and resurfacing of roadways totaling 101.26 miles of streets. Of this total, 10.53 miles is to be undertaken with funds originally provided in the Municipal Railway Bond Issue for the purpose of reconstructing streetcar tracks. The remainder, namely, 90.73 miles is to be financed out of the Street Improvement Bond Issue or other funds. Original estimates of cost were \$10,500,000 for the street bond program and \$1,322,692 for the railway bond program.

As of July 1, 1950, 50.42 miles of the total street mileage had been covered by contracts completed or awarded, which is 49.8 per cent of the total. Expenditures for this work were made from various funds as follows:

Street Improvement Bond Fund	\$4,280,351.97
Municipal Railway Bond Fund	513,216.54
Gas Tax Funds for Major Streets	35,000.00
Gas Tax Funds for County Roads	737,535.29
General Funds	148,902.44
Total	\$5,715,006.24

The original estimate of cost for this work was \$7,236,442 indicating that costs are running substantially below original estimates. The figures also indicate that the cost per mile of city streets improved averages about \$113,000.

During the fiscal year 1949-1950 eight contracts were awarded, aggregating 19.06 miles in length of street and costing \$2,040,342.98 as listed in Table B-4 of Appendix I. In addition .61 miles of street were improved by removal of streetcar tracks under contracts awarded for sewer work in lower Jackson Street, Cornwall Street and Arguello Boulevard, making the total mileage undertaken during the year 19.67.

The accompanying map shows in solid lines the track removal work completed to the end of the fiscal year and in dash lines those locations in which work was underway at that time.

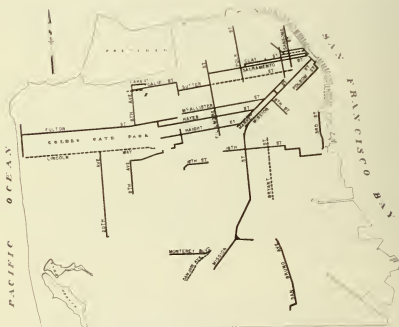
HIGHWAY STRUCTURES

Islais Creek Bridge

Construction of the new double-leaf bascule bridge crossing Islais Creek on Third Street, which was started during the preceding year, was completed on March 3, 1950 and was open to traffic on that day. Operation has been satisfactory since the bridge was opened. Some minor subsidence of the abutments and slight



HAIGHT STREET
Showing Track Pulling Equipment



TRACK REMOVAL PROGRAM
as of June 30, 1950
Solid lines - Work completed
Dash lines - Work under way



ISLAIS CREEK BRIDGE



ALEMANY OVERPASS

Overpass structure carrying Alemany Boulevard
southbound over Junipero Serra Boulevard

movement of the abutments toward each other has been detected by means of accurate surveys. This movement is not unexpected and is not likely to cause any serious maintenance problem. The movement is being carefully measured at regular intervals.

Alemaný Over-pass Structure

An elevated structure to carry west bound Alemany Boulevard traffic across and into Junipero Serra Boulevard was started in the fall of 1949 and was almost completed by the end of the fiscal year. This structure carries a two-lane roadway super-elevated to compensate for curvature and having a total length of 1454 feet. The two main girders are constructed to conform with the curvature of the deck which has a minimum radius of 600 feet. Cantilever construction was employed with alternate spans suspended.

The distinctive feature of this project was the use of colored concrete, which was obtained by adding blended iron oxides to the transit-mix trucks while they were enroute from the mixing plant to the job. The color is light terracotta, which harmonizes well with the reddish soil which is to be seen frequently in the vicinity.

Broadway Tunnel

The Broadway Tunnel, which was briefly described on page 23 of last year's report, was started on April 19, 1950. The contract price is \$5,253,522. The tunnel is scheduled to be completed on April 30, 1952.



BROADWAY TUNNEL
Preliminary Work at East Portal

By June 30, 1950 a part of the excavation for the East approach to the tunnel had been started and certain preliminary sewer reconstruction and other incidental work had been done. The contractor's operations were somewhat hampered by the existence of certain buildings on the City's right-of-way, which had not yet been removed by the time the Contractor started his work.

PLANS

A number of highway projects are scheduled for construction during the coming fiscal year and plans for many of them were about ready. Among the more important ones, in the approximate order in which they will be undertaken, are the following:

Mission Street Viaduct - reconstruction at the
Alemany Boulevard Crossing

El Camino Del Mar - reconstruction in slide area

Channelization of Junipero Serra Boulevard from
Ocean Avenue to Nineteenth Avenue

Bryant Street Viaduct from Second Street to
Beale Street

Stanley Drive under-pass at the Junipero Serra
Crossing

Stanley Drive Parkway from Junipero Serra Boulevard
to Alemany Boulevard

Monterey Boulevard - widening of roadways

STREET IMPROVEMENTS FINANCED BY PROPERTY OWNERS

All street construction work financed in whole or in part by the fronting property owners for which permits were issued or contracts were awarded during the fiscal year ending June 30, 1950 and also those which were authorized but not completed in the previous fiscal year are listed in detail in Appendix I, Tables B-1 and B-2. Table B-1 covers street improvement projects performed under contracts negotiated directly between the property owners and a contractor, the City's only function being to grant permits, furnish the plans and inspect the construction work. Table B-2 covers the same class of work as in Table B-1 except that the contract is awarded by the City and the cost assessed against the property owners. In cases where the assessed value is very low, City aid is extended.

The number of permits for private contracts issued in the past year was 35, the same as in the previous year but the cost involved was about 10% greater. The number of contracts awarded for work done under assessment proceeding was 26, the same as in

the preceding year but the cost involved was about 50% of that of the preceding year. More work could have been done under assessment proceedings if City funds had been available for supplying the necessary City aid on desirable projects which had been requested by property owners.

The following tabulations indicate the volume of work carried on during the year in connection with street improvement procedures under the San Francisco Street Improvement Ordinance of 1934:

Assessments and Bonds

Assessments issued for cost of street work.....	30
Cost of st. improvements covered by assessments issued	\$373,535.97
Receipts for bond payments issued.....	40
Amount of bond payment collected.....	\$4,352.28

Street Work Proceedings

Resolutions of Intention passed	28
Street Improvement Projects recommended to the Board of Supervisors	31
Notices of Street Improvement posted	469
Notices of Resolution of Intention mailed	457
Ordinances ordering performance of street improvements passed	26
Proposals for street improvements published	31
Awards of Contract for street improvements	27
Notices of Recordation posted	329
Notices of Recordation mailed	547
Private contracts granted	41

STREET DEDICATIONS AND CHANGES

Numerous actions taken by the City during the year with reference to subdivisions, street grades, sidewalk widths and street closings were based on investigations and recommendations of the Bureau of Engineering and in many cases involved preparation of specific descriptions by the Surveys and Mapping Division of the Bureau.

SUBDIVISION MAPS

The tentative subdivision maps listed below were received during the year from subdividers. Of these, eight were new and

one, "Shangri La", was a resubmission. All were examined and reports made as to compliance with the State Business and Professions Code and City Ordinances relating to the design and improvement of proposed subdivisions.

Westview Terrace, now Midtown Terrace
Sherwood Heights
Lakeshore Subdivision #4
Stonestown
Lawton Heights
O'Shaughnessy Terrace
Perego Heights
Kirkham Heights
Shangri La (Resubmitted May 1950)

Two subdivision maps previously submitted were approved by the City Engineer and the Director of Public Works and filed in the Recorder's Office as follows:

La Grande Vue Subdivision
Crocker Amazon Highlands

STREET OPENING AND WIDENING

Maps were approved and recorded during the year providing for the opening and widening of streets as follows:

Bernal Heights - opening
Bradford Street - widening
Alabama Street and Esmeralda Avenue - widening
Masonic Avenue: Geary Boulevard to Laurel Heights Subdivision - widening
Vicente Street: Forty-second to Forty-third Avenue - widening of south side
Geary Boulevard: Masonic to Presidio Avenue - widening
Geary Street: Presidio Avenue to Broderick Street - widening
O'Farrell Street: St. Joseph's Avenue to Broderick Street - widening
Masonic Avenue: O'Farrell Street to Geary Boulevard - widening
Parkmerced widening and extension of streets therein
Presidio Avenue and California Street - widening

GRADES CHANGED

No new grades were established during the past year but actions necessary to change the grades in many locations were instituted. Changes under consideration are as follows:

Colby Street	Silliman Street to Felton Street
Franconia Street	Rutledge Street to Esmeralda Avenue
Massasoit Street	Franconia Street to Rutledge Street
Loomis Street	Oakdale Avenue to Industrial Street
Broadway	Powell Street to Taylor Street
Forty-seventh Avenue	Ulloa Street to Vicente Street
Bowdoin Street	Woolsey Street to Dwight Street
Somerset Street	Dwight Street to Mansell Street
Holyoke Street	Dwight Street to Mansell Street
Olmstead Street	Goettingen Street to Hamilton Street
Mansell Street	Somerset Street to Hamilton Street
Wayland Street	Hamilton Street to Bowdoin Street
Carver Street	North and South of Mayflower Street
Thrift Street	Summit Street to Plymouth Avenue
Summit Street	Margaret Street to Thrift Street
Elmira Street	Shafter St. to 380' So. of Helena Street
Twenty-sixth Street	Hoffman Avenue to Burnham Street
Army Street	Hoffman Avenue to Clipper Street
Twenty-seventh Street	Hoffman Avenue to Burnett Avenue
Hoffman Avenue	Twenty-sixth Street to Twenty-eighth St.
Burnham Street	Twenty-sixth Street to Duncan Street

SIDEWALK WIDTHS CHANGED

Changes in official sidewalk widths requiring action of the Board of Supervisors occurred in eleven blocks of City Streets as follows:

Patterson Street: Oakdale Avenue to westerly termination
 Erkson Street: Post Street to Northerly termination
 Twenty-fourth Street: South Van Ness Ave. to Dolores Street
 Carver Street: North and South of Mayflower Street

VACATED AND ABANDONED STREETS

The following streets were abandoned between the limits stated:

Crocker Street	Market Street to Otis Street
Grant Avenue	Bay Street to North Point Street
Islais Creek Slude Plant	Streets within site
Wells Court	Southerly Lombard Street, east of Stockton Street

Forty-first Avenue	Vicente Street to Wawona Street
Georgia Street	Twenty-fourth Street to Twenty-fifth Street
Keith Street	Egbert Avenue to Fitzgerald Avenue
Hooper and Irwin Streets	Third Street to Fourth Street
Kenyon Avenue	O'Shaughnessy Boulevard to Twenty-Eighth Street
Valley Street	O'Shaughnessy Boulevard to Kenyon Street
Twenty-eighth Street	O'Shaughnessy Boulevard to Kenyon Street
Portola Drive	Portion formerly known as "Old Ocean House Road"
Waterfront Street	Humboldt Street to 24th Street
Louisiana Street	24th Street to 25th Street
Canal Street	Congdon Street to 409.919 westerly At Canal Street
Congdon Street	Kirkham Street and Sixth Avenue
Locksley Avenue	Army St. to southerly termination
De Haro Street	In Parkmerced
Felix Avenue	East of Farnum Street
Moreland Street	Mariposa Street to 18th Street
Wisconsin Street	

TRAFFIC ENGINEERING

COORDINATION WITH POLICE DEPARTMENT

The responsibility for traffic engineering in San Francisco is divided between the Police Department and the Department of Public Works in such manner that there is no clear definition of their respective functions. In the City Charter as adopted in 1932, the function of the Police Department in relation to traffic is contained in a single sentence reading as follows (Section 35): "They (the Police Commissioners) shall have power to regulate traffic, including the location and use of traffic control devices for that purpose."

The Department of Public Works is not specifically authorized by the Charter to perform any function whatsoever with relation to traffic, but for many years the Board of Supervisors has appropriated substantial amounts from gas tax revenues for use by the Department in making traffic studies, preparing plans for traffic signals and other traffic devices and performing other related functions. This type of work has been continuously performed by a traffic engineering section or division of the Bureau of Engineering. This division, in addition to its design activities, has supervised the installation of traffic signs, traffic striping, parking meters and other traffic devices.

The functions of the Police Department were somewhat amplified by a Charter Amendment effective January 7, 1949, which authorized the establishment of a Bureau of Traffic Engineering and Administration in the Police Department. The functions of this bureau are stated as follows: "(a) to regulate all street traffic; (b) to promote traffic safety education and to receive, study and give prompt attention to complaints in relation to street traffic; (c) to collect, compile, analyze and interpret traffic data, including traffic accident information; to engage in traffic re-research and traffic planning; to review the design of the traffic facilities of the city and county and to participate in studies and investigations of street design and operation; and (d) to cooperate for the best performance of these functions, with the department of public works, the public utilities commission, the fire department, the department of city planning, the board of supervisors and other departments and agencies of the city and county and state as may be necessary." The amendment states further: "The powers and duties of the traffic director hereinabove stated shall not modify to any extent the powers and duties of any department or office, but shall be, first, for the purpose of assisting the police commission in its regulation of traffic, and second, for the purpose of recommendation only, to other departments or offices upon matters within their jurisdiction, but affecting to any extent the regulation of traffic."

Pursuant to the above Amendment to the City Charter, the Police Department has organized a small engineering staff which has proceeded to take over some of the functions heretofore performed in the Department of Public Works. The fact that two traffic engineering staffs are now engaged in traffic work has led to further confusion rather than clarification of the administrative problem. It would appear that some further modification of the Charter will be necessary before traffic engineering within the City can be placed on a sound administrative basis.

TRAFFIC SIGNAL INSTALLATION

In the past fiscal year, traffic signals were installed at 87 street intersections, 78 being included in coordinated systems and the remaining 9 being at isolated intersections. At 15 of the new installations 3-light signals replaced obsolete Wiley signals. As of June 30, 1950, 405 intersections in the city were signalized, 253 of them being equipped with the modern 3-light signals.

Alemany Boulevard (U. S. 101) between Mission Street and San Jose Avenue was equipped at six of its intersections with volume density type automatic signals with controllers known as

type 1022 Dispatchers. This new type of controller, now being used for the first time in San Francisco, has the ability to gauge the relative demands of traffic on each street, weigh the results, and allocate the passage times so as to result in the most efficient movement of traffic.

Bush Street and Pine Street, adjoining one way streets, have both been completely signalized from Presidio Avenue to Market Street with a progressive fixed-time system which is providing free movement except when interrupted by cable cars on cross streets.

On Market Street from Van Ness Avenue to Eureka Street, all Wiley type signals were replaced with 3-light signals and several intersections heretofore uncontrolled were also signalized. A new and special type of signal timing was introduced at the numerous three-way intersections which is basically a fixed-time three-dial system. The intersection of 17th, Market and Castro Streets, however, is controlled by a three-phase, traffic actuated dispatcher and is interconnected with the crossings at Diamond and Eureka Streets, which are semi-actuated. The Castro dispatcher acts as the master controller in setting the cycle length for the three intersections. A time clock determines a triple offset program to favor the movement of traffic in the major direction.

Extensive use of the new neon Walk-Wait signals was included in the Market Street project. All cross walks across Market Street were covered by these signals but in the crossings parallel to Market Street the pedestrian continues to depend upon the three light signals.

TRAFFIC SIGNAL PLANNING

Plans are well under way for the signalization of Junipero Serra Boulevard and the main streets in the Mission District. The Mission project will include the following streets:

Guerrero St. - 14th St. to 24th St.
Valencia St. - " " " " "
Mission St. - " " " " "
So. Van Ness Ave. 13th St. to 24th St.

In addition, important cross streets such as 16th, 18th and 24th will be signalized from Folsom Street through to Church Street.

Plans to revamp the Bayshore Boulevard traffic signal system from Sunnysdale Avenue to Tunnel Avenue, in order to accommodate increased traffic volumes, are near completion.

Isolated signals which will eventually fit into signal systems have been surveyed and divided into two groups. Contract No. 5 which will cover the following installations was nearing the bid stage:

11th and Harrison Sts.
 Fulton St. and Masonic Ave.
 Taylor and O'Farrell Sts.
 Fillmore and Bay Streets
 Geary Blvd. at 20th and 36th Aves.

Plans for Contract No. 6 to cover eleven installations at various locations largely in the Mission District were well under way.

CHANNELIZATION

Important channelization projects were completed in connection with the traffic signal installations at the intersections of Van Ness Avenue, Eleventh and Market Streets and 17th, Castro and Market Streets.

The channelization at 17th and Castro Streets was introduced experimentally by the use of painted lines and a portable sign in the middle of the intersection to restrict left turns. The success of this improvement was so obvious that immediate steps were taken to make the installation permanent.

TRAFFIC STRIPING

During the fiscal year 161.5 miles of streets were striped for traffic and 1457 intersections were painted with cross walks for pedestrians. The quantities of work performed by the Bureau of Building Repair under supervision of the Bureau of Engineering were as follows:

Traffic stripes painted	313.9 miles
Pedestrian cross walks(12-in. stripes)	622,226 lin. ft.
Lettered signs on pavement	7,058
Bus stop stalls	918

This work was performed at a total cost of \$107,462.36.

Special emphasis was placed on increasing the number of painted bus zones because of the many conversions from street car to bus or trolley coach operation. For the first time, an arrangement was made whereby the Municipal Railway will share equally with the Department of Public Works in the cost of the bus zone painting.

TRAFFIC SIGNS

During the year 1488 new traffic signs of various types were installed at a total cost of \$6,587.15. Orders for the installation of signs were issued by the Police Department, in some cases with the advice and recommendation of the Bureau of Engineering. Signs were furnished and installed by the California State Automobile Association under a continuing contract with the Department of Public Works, costs being paid from gas tax funds.

In order to facilitate the work of the Police Department in the enforcement of the "No Stopping" regulations during the peak hours, an enlarged type of regulatory sign (20" x 30") was designed to inform motorists of the tow-away system. A supplemental appropriation in the amount of \$20,000 was authorized by the Board of Supervisors for the conversion of all parking signs on "tow away" streets. Approximately 2,000 conversions are anticipated most of which will be made in the next fiscal year.

PARKING METERS

During the year 4,032 new meters were installed in four new zones and four revised zones bringing the total number of installations to 8,384. The total number of meters in operation on June 30, 1950 was 8,325. The difference between meters installed and meters in operation is due to the continuous adjustment of meter placements. During the year over 30 meters were relocated, 165 meters were removed due to authorizations of new bus zone stalls, drop curbs, yellow zones, etc., and 67 new installations were made where additional parking stalls became available. At the present time, it is expected that at least 2,000 additional meters will be installed in various sections of the City.

STREET SIGNS

During the year 1,147 installations of the new type street signs in the southwest section of the City were made. The total number of signs which had been installed as of June 30, 1950 was 3,762 at an approximate cost of \$170,000. The contract covering installations in the Sunset District was awarded leaving only the south of Market-Mission area yet to be surveyed. The surveys necessary for the preparation of a contract for this latter area were well under way.

TRAFFIC ROUTING

Increasing emphasis was given to planning the protection of traffic and to expediting its movement by means of detours and special routing in the vicinity of city construction projects.

Approximately 20 contracts for sewer installations, track removal, and other work contained carefully developed specifications for the handling of traffic around obstructions. In many instances traffic routing involved coordination of the contractor's work with special traffic striping, signing and either signal or police control. Often a representative of the Traffic Engineering Division was assigned to aid the resident engineer in the field as unforeseen changes and coordination were required.

TRANSIT STUDIES

A close working arrangement has developed between the Traffic Engineering Division of this Bureau and the Operations, Safety and Engineering Divisions of the Municipal Railway. This has resulted in benefits to the railway by location of channelization islands with conveniently operating turning radii, locations for trolley poles and skip stops, and recommendations on bus routings particularly in reference to terminal areas.

As a railway safety feature an eight inch traffic signal lens was installed at Market Street and Duboce Avenue showing a green cross-buck when lighted. Special timing is incorporated in the traffic signal controller to light the cross-buck when the "N" streetcar should make its right turn from the center of the street across heavy vehicular traffic. The success of this safety operation indicates that its use will be extended to other points where serious conflicts between streetcars and other vehicular traffic occur.

MISCELLANEOUS INVESTIGATIONS

The Division of Traffic Engineering made numerous investigations at the request of the Police Department, other City departments, improvement clubs and private citizens for improvement of traffic conditions. A total of 131 reports were made to the Police Department and 672 letters were written to others.

All police accident reports were reviewed to discover damage to City property and 182 letters were written during the year to obtain the cost of repairs and refer the information to the department responsible for seeking recovery.

NATIONAL AWARDS FOR TRAFFIC SAFETY

The National Safety Council awarded San Francisco the first prize for traffic safety for cities in the group with populations between 750,000 and 1,000,000. This award was based on enforcement and education as well as traffic engineering. The various

improvements that were made during the year 1949 constituted the performance record upon which the warrants for rendering the award were calculated.

The American Automobile Association's "First" award for pedestrian safety for 1949 for cities in the 500,000 to 1,000,000 classification was also won by San Francisco, as well as the Association's coveted "Grand" award for pedestrian safety for all cities with populations over 100,000.



TRAFFIC SAFETY AWARDS - JUNE 5, 1950

Individuals shown are (left to right) Joseph R. Knowland, Chairman of Public Safety Committee, California State Automobile Assn.; Mayor Elmer E. Robinson; Ned H. Dearborn, President National Safety Council, Chicago; Clair V. Goodwin, President San Francisco Chapter National Safety Council.

STREET AND SIDEWALK PERMITS AND INSPECTIONS

The following tabulations indicate the variety of miscellaneous inspections made during the year and the numbers and types of various kinds of permits approved:

Utility Excavation Charges and Miscellaneous Permit Fees

Utility Excavations:	Number Permits	Fees
Pacific Gas & Electric Co.	6,204	\$ 9,294.25
Pacific Telephone & Telegraph Co.	470	705.00
S. F. Water Department	4,842	7,263.00
Street Lighting, Trolley Electrification, Traffic Signals & etc.	299	448.50
Total	11,815	\$17,710.75

Miscellaneous Permits:	Number	Fees
Curb Lowerings and Sidewalk Tanks	1,415	\$ 3,991.00
House Movings	86	1,740.00
Street Spaces	1,395	25,884.67
Total	2,896	\$31,615.67

Special Permits	Number	Fees
Blasting	6	-
Flower Stands	36	\$ 1,296.00
Sidewalks	45	
Total	87	\$ 1,296.00
Totals	14,798	\$50,622.42

Notices, Permits and Investigations

ITEMS

NO.

1. Lot frontages inspected for sidewalk conditions	16,745
2. Curb lowering permits and inspections	718
3. Ownership addresses researched	5,931
4. Notices to construct or repair sidewalks	4,552
5. Notices to remove obstructions, oil, etc.	369
6. Notices to replace side sewer covers	422

7. Street Space permits and inspections	2,091
8. Sidewalk tank excavation permits and inspections	192
9. House moving permits and inspections	257
10. Defects in pavements reported (written)	2,607
11. Damaged signs reported	109
12. Excavation permits approved	12,351
13. Excavation repaving inspected	6,599
14. Posting Notices of Improvements	1,042
15. State Encroachment Permits obtained	126
16. Asphalt samples for analysis	50
17. Claims investigations and inspections	179
18. Special investigations and permits (Blasting, etc.)	1,267
19. Correspondence answered	160
20. Personal and telephone calls of complaints or for information	10,636
21. Citations	9

DAMAGE CLAIMS

The Bureau investigated 121 damage claims which had been filed against the Department of Public Works based on street and sidewalk accidents. Fifty-five of them were found to be the responsibility of contractors or privately or publicly owned utilities. The remainder included 25 claims alleging defective pavements and 41 alleging defective sidewalks, which would be the responsibility of the Department of Public Works if negligence in making repairs could be shown. In each of these cases a full report was made, accompanied by photographs when appropriate.

The annual tabulation of all claims involving the Department of Public Works was closed on October 5, 1949, showing all claims and suits filed or active for the five year period ending June 30, 1949. This tabulation, prepared for the Director and City Attorney, included personal injury and property damage claims of the type mentioned above, and also the damage claims resulting from accidents in which Department of Works vehicles and equipment were involved, as well as accidents at cave-ins from broken sewers.

The following significant figures are taken from the summary:

Claims filed 5-year period	547
Claims and suits settled	141
Claims outlawed (no suits filed)	122 263

Suits pending, June 30, 1949	96	
Claims pending, June 30, 1949	188	284
Suits filed prior to 5-year period and still pending June 30, 1949		24
TOTAL suits and claims pending		308

The 141 claims and suits which were settled demanded damages aggregating \$754,649. The amount paid by the City was \$31,992.

SURVEYS AND MAPPING

GENERAL SURVEYS

During the fiscal year field surveys were performed by seven parties of four men each and one party of two men. One four-man party and the two-man party were assigned to the Sewage Treatment and Sludge Plants to furnish the lines and grades required for construction. These men reported directly to the plants and were employed there almost continuously throughout the year.

Surveys, preliminary to the removal of street car tracks, required the full time services of one survey party. The recent bond issue authorizing the building of additional schools necessitated the making of surveys to furnish descriptions for the acquisition of property and to obtain topography for the use of architects engaged to prepare plans for the new schools and additions to existing schools. Boundaries for eight Recreation Department playgrounds and two Branch Library lots were run. The Broadway Tunnel and the Lake Merced Sewer Tunnel; subsidence checks on the Third Street bridge at Islais Creek; examinations of newly paved streets and the boundaries of new subdivisions; establishing monument lines; and surveys required to furnish data for the design of new facilities occupied the remaining time of the survey parties.

The surveys made during the year involved the running of 195.5 miles of line distributed as follows:

Type of Survey	Length in Miles
Lots	11.4
Sewers	14.3
Cross Sections	46.7
Subsidence	2.8
Monument Lines	1.8
Topography	62.3

Type of Survey	Length in Miles
New Streets	5.8
Line and Grade for Curbs and Paving	29.2
Track Removal	21.2
Total	195.5

In connection with the 1.8 miles of monument lines tabulated above, thirty-one monuments were either set, checked, recapped or referenced.

PRECISE LEVELS

No party being available for the running of precision levels to set bench marks, no work was performed in this field during the year.

NUMBER OF SURVEYS MADE AND FEES RECEIVED

Public Improvement Surveys

For Public Contracts	39
For Private Contracts	36
Resurveys for Public and Private Contracts	53
For Municipal Departments	177
Total Surveys for Public Improvements	305

Lot Surveys

For Private Owners	0
For Municipal Departments	10
For San Francisco Unified School District	26
Total Lot Surveys	36

Survey Fees Received - Fiscal Year 1949-1950

July	\$1,440.00
August	2,165.00
September	635.00
October	787.00
November	425.00
December	1,075.00
January	660.00
February	325.00
March	1,325.00

Survey Fees Received - Fiscal Year 1949-1950

April	\$ 295.00
May	140.00
June	625.00
Total	\$9,897.00

OFFICE WORK

Seventeen maps of school sites, playgrounds and library lots were prepared showing precise boundaries, locations of improvements and utilities, and contours at five-foot intervals.

Computations and preliminary drawings required for the acquisition of property were made on such projects as the widening and extension of Thirteenth Street, improvement of Stanley Drive, Lake Merced Sewer Tunnel right of way, and on numerous other minor projects. Deed descriptions of all property to be acquired by the City for these projects were written.

All tentative subdivision maps submitted were examined and checked for correctness of street widths and grades. Final subdivision maps submitted for filing in the Public Records were checked for correctness of all dimensions of lot lines and exterior boundaries.

To determine the City's interest in the property involved and to check the boundary description, thirty-four actions to quiet title and four Eminent Domain actions were examined and reports made to the City Attorney's office.

Section 117 of the City Charter requires that appeals from decisions of the City Planning Commission shall be signed by twenty percent of the owners within a radius of 300 feet of the property involved. Nine such appeals were checked and reports made to the Clerk of the Board of Supervisors.

POST-WAR STATE AID

Under the two State Aid acts providing financial assistance to local communities for the planning and building of public works, no additional applications were filed but substantial reimbursements were received on applications previously filed. The amounts of the several State allocations and the amounts received

by the city to July 1, 1950, are shown below:

Act and Purpose	Allocation	Received
Planning Assistance Act (Chap. 47 Stats. of 1944)		
Department of Public Works		
For plans	\$ 540,800.00	\$ 425,823.26
For land purchases	249,621.72	89,474.35
Sub-Total	790,421.72	515,297.61
Recreation Department	44,698.12	3,538.57
Unassigned to any department	2,781.93	- - - -
Total for City	\$837,901.77	\$518,836.18
Construction and Employment Act (Chap. 20 Stats. of 1946)		
For Highway projects (DPW)	398,383.79	398,383.79
For other projects (DPW)	7,959,078.97	4,359,486.73
Total	\$8,357,462.76	\$4,757,870.52

APPLICATIONS FOR PLANNING FUNDS

At the close of the year, there were 15 active applications for planning as shown in Appendix III, Table I. As of June 30, 1950, the status of the allocations for all planning projects in San Francisco City and County is as follows:

Total Allocation for Plans	\$588,280.05	
Less Project applications & Final Payments:		
Recreation Department		
Applications No. 148 to 157 (inc.) and No. 244	\$ 44,698.12	
Department of Public Works		
15 active Applications	164,394.00	
Final Payments (DPW)	372,576.26	\$581,668.38
Balance Available for New Applications as of 6/30/50		\$ 6,611.67

REIMBURSEMENTS ON PLANNING APPLICATIONS

Final payment of \$7,000.00 on one project was received during the fiscal year. No partial claims or payments were made on plans.

REIMBURSEMENT FOR LAND ACQUISITION

Application No. 2013 on the Army-San Jose-Guerrero Highway Project (for 67 parcels of land) has an approved allocation of State aid for \$249,621.72. A partial claim for 23 parcels of \$89,474.35 was paid on August 22, 1947. No further claims have been filed because only 6 or 7 parcels were purchased since that date and most of the remaining parcels are under condemnation proceedings.

APPLICATIONS FOR CONSTRUCTION FUNDS

Five applications for construction funds were active at the close of the fiscal year amounting to \$4,835,055.34 as follows:

State No.	Project	State's Share	Resolution	
			Series of 1939 No.	Date
26	Seventh Street Outfall	\$ 4,200.00	5665	7/ 8/46
27	23rd Street Sewer	23,200.00	5665	7/ 8/46
647	N. P. Pretreatment & Sedimentation	2,138,050.00	7050	12/ 1/47
647A	N. P. Pretreatment & Sedimentation	819,605.34	8199	12/20/48
648	Sludge Treatment Plant at Islais Creek	1,550,000.00	7050	12/ 1/47
649	N. P. P. Influent & Effluent Sewers	300,000.00	7050	12/ 1/47
	Total Active Projects	\$4,835,055.34	7050	12/ 1/47

REIMBURSEMENT FOR CONSTRUCTION PROJECTS

Payments were received from the State during the year as follows:

State No.	Project		Amount	Date
4	Richmond Sunset Plant	Final	\$126,162.38	9/29/49
28	Lake St. Sewer - Sec. "A"	"	71,393.35	9/29/49
881	Islais Creek Bridge	"	126,741.86	6/21/50
1138	Lake Merced Tunnel - Sec. "D"	"	196,565.74	5/19/50
1139	Lake Merced Sewer - Sec. "C"	"	114,681.27	6/23/50
1142	Scott St. Sewer - Sec. "E"	"	58,610.13	2/27/50
1143	Lake St. Sewer - Sec. "B"	"	20,909.96	3/21/50
647	North Point Plant	Partial	163,334.62	7/29/49
& 647A	" " "	"	80,450.47	9/ 8/49

State No.				Amount	Date
647	North Point Plant	Partial		\$173,402.74	10/26/49
& 647A	" " "	"		224,506.65	1/19/50
	" " "	"		329,481.78	3/31/50
	" " "	"		217,320.29	6/ 5/50
648	North Point Sludge Plant	"		156,153.45	3/16/50
649	North Point Infl. & Effl. Sewers	"		77,920.90	6/18/50
881	Islais Creek Bridge	"		97,167.36	10/ 6/49
	" " "	"		139,405.74	2/14/50
1138	Lake Merced Tunnel - Sec. "D"	"		331,176.36	8/30/49
	" " " " "	"		135,793.99	1/19/50
1139	Lake Merced Sewer - Sec. "C"	"		101,228.12	10/ 5/49
	" " " " "	"		223,090.61	2/ 7/50
1143	Lake St. Sewer - Sec. "B"	"		109,875.96	1/26/50
Total				\$3,275,373.73	
429	St. Charles Ave. Sewer, refund to State			- 2.30	8/30/49
Total received 1949-50				\$3,275,371.43	
Received prior to July 1, 1949				1,482,499.09	
Total received to date 6/30/50				\$4,757,870.52	

SUMMARY OF STATE AID FUNDS RECEIVED

The following table summarizes the payments received from the State by the Department of Public Works under the two State Aid acts to July 1, 1950.

Payments Received from State

Act and Item	1946-49	1949-50	Total
Planning Assistance Act			
Plans	\$ 418,823.26	\$ 7,000.00	\$ 425,823.26
Land Acquisition	89,474.35	0	89,474.35
Total Plans & Land	\$ 508,297.61	\$ 7,000.00	\$ 515,297.61
Construction and Employment Act			
Highway Projects	\$ 35,068.83	\$ 363,314.96	\$ 398,383.79
Other Projects	1,447,430.26	2,912,056.47	4,359,486.73
Total Constn., etc.	\$1,482,499.09	\$3,275,371.43	\$4,757,870.52
Total - Both Acts	\$1,990,796.70	\$3,282,371.43	\$5,273,168.13

Payments received from the State from April 11, 1946 (first payment) to June 30, 1950, have been credited to City Accounts as follows:

City Accounts Credited

City Account	Plans & Land	Construction	Total
1944 Sewer Bond Fund	\$391,658.79	\$4,359,486.73	\$4,751,145.52
Special Gas Tax Fund	106,522.85		106,522.85
Special Road Impt. Fund	11,166.42		11,166.42
State Highway Trust Fund	5,949.55		5,949.55
Gen. Fund (*Reimbursement)		398,383.79	398,383.79
TOTAL TO JUNE 30, 1950	\$515,297.61	\$4,757,870.52	\$5,273,168.13

To date under the Construction and Employment Act, payments received and to be received have been allocated to the following main classes of projects:

Class of Project	Final Payments 1946 - 50	Allocated as of 6/30/50	Total Allocations and Payments
A Sewage Disposal	\$ 454,120.55	\$4,807,655.34	\$5,261,775.89
B Sewage Pumping	23,494.55		23,494.55
C Main Sewers	2,459,300.73	27,400.00	2,486,700.73
D Bridges	398,383.79		398,383.79
Reversions (Unallocated)			187,107.80
Totals	\$3,335,299.62	\$4,835,055.34	**\$8,357,462.76

LABORATORY AND TESTING WORK

The testing laboratory was operated as a part of the Division of Construction to control materials used on construction projects, and particularly, to verify asphalt and concrete mixes used on street work and in various structures. In addition many routine tests were made for the Purchaser of Supplies and for various other City departments.

COLORED CONCRETE

As mentioned in a previous section of this report, a colored concrete was used in the construction of the Alemany Overpass at

*Reimbursement of advance for construction of Islais Creek Bridge.

**Total of General Allocation to City and County of San Francisco under the Construction and Employment Act.

Junipero Serra Boulevard. Some experimenting was necessary to secure the desired color and also to determine the best means of introducing the color pigment into the concrete batches. The first matter was readily taken care of by trying a number of pigments one after another in concrete batches going to the job for certain footings, which were later to be covered up. The final selection of color was made after consultation with the architectural committee of the City Art Commission.

The mixing of the color pigments was a matter of serious concern to the operator of the central mixing plant. There was objection to running the colored concrete through the plant since it would be difficult and expensive to clean the equipment following each color run with sufficient thoroughness to avoid introducing color into concrete for other customers. For this reason mixing in the transit-mix trucks was authorized. Introduction of the color pigments was tried first at the bottom of the batch and then in the middle of the batch, but in each case it was found that the color was not evenly distributed. Finally the color was added to the top of the load after the full concrete batch had been discharged into the truck. This method gave most consistent results with even dispersion of color but required close inspection because some trucks did not mix as thoroughly as others. Uneven batches were used where they would not be in contact with forms. Some variations of color have appeared on the finished surfaces due to differences in texture of the plywood forms. A uniform color could probably be obtained by sandblasting the exposed surfaces.

HEAVY WEIGHT CONCRETE

Specifications for the counterweights of the Islais Creek Bridge called for two classes of concrete weighing 217 and 224 pounds per cubic foot respectively. These requirements were met by using "Magnetite" iron ore as the aggregate with six sacks of cement per cubic yard of concrete.

LIGHT WEIGHT CONCRETE

Spacer blocks for the cast iron effluent lines from the North Point Sewage Treatment plant were cast at the Ben C. Gerwick Company yard at Petaluma. "Haydite" aggregate was used to give the finished concrete an average weight of 105 pounds per cubic foot.

SPECIAL CONCRETE TESTS

To obtain data on safe stripping time for use on Broadway Tunnel construction, tests were made on concrete samples at 8,16

and 24 hours after pour, together with the usual 7 and 28 day tests. The average strengths in compression were as follows:

8 hrs.	75	p.s.i.
16 " . . . . .	.250	"
24 " . . . . .	.450	"
7 Day	2470	"
28 "	3560	"

The concrete used in these tests was taken from a wet mix, about 6-inch slump, which was being pumped into the arch of the Lake Merced Sewer Tunnel, Section "D".

ASPHALT PAVING

At the request of the Public Utilities Commission, a special investigation was made of the asphaltic mixes being used on the runways at the San Francisco Airport. Aggregates were supplied by the "MACCO" corporation from their Brisbane quarry.

It was found that the plant was overloading their screens thus resulting in poor grading of aggregates in the bunkers, which made it impossible to get consistent batches. The quarry screenings below the #6 screen could not be used due to excessive dust. Coarse sand had to be imported from Niles and Rockaway and had to be blended with a fine sand imported from Millbrae. This procedure required rigid inspection and frequent screen analysis to keep the sand blend within specifications. These conditions together with improper rolling at the airport caused frequent shut-downs and the condemning of several large areas of pavement after placement.

These difficulties were overcome by cutting down the output capacity of the plant thus slowing down the screens and yielding more uniform grading of aggregates in the bunkers. The rolling at the airport was modified by using lighter rollers to break down behind the spreader and the heavier rollers for finishing at proper temperatures.

SUMMARY OF TESTS PERFORMED

A summary of the tests made in the laboratory during the year, together with corresponding figures for the preceeding year are shown in the following tables:-

Laboratory Tests

1948-49

1949-50

Chemical & Physical Tests

Public Utilities Commission	60		35	
Department of Public Works	198		225	
Purchaser of Supplies	49		62	
San Francisco Fire Department	80		60	
Recreation & Park Department	3		10	
Bureau of Architecture	24		18	
Bureau of Engineering	65	479	50	460

Paint Tests

Recreation & Park Department			10	
Purchaser of Supplies	20		8	
Bureau of Architecture	2		16	
Public Utilities Commission	3		10	
Bureau of Engineering	13	38	15	59

Asphalt and Coal Tar Tests

Corporation Trenches	85		30	
Public Utilities Commission	6		6	
Recreation & Park Department	2		8	
Department of Public Works	143		60	
Bureau of Engineering	200	436	80	184

Concrete Tests

Bureau of Building Inspection	4		2	
Recreation & Park Department	23		224	
Bureau of Architecture	63		284	
Public Utilities Commission	442		272	
Bureau of Engineering	869	1401	920	1702

Totals

2354

2405

SERVICES PERFORMED
FOR OTHER BUREAUS AND DEPARTMENTS

The Bureau of Engineering supplied technical services requested by numerous bureaus and departments of the City as summarized below.

FOR BUREAU OF ARCHITECTURE

Review of structural design for carpenter shop at De Young Museum.

FOR THE RECREATION AND PARK COMMISSION

Prepared contract plans for the improvement of Phelan Beach.

Made recommendations as to the operation and maintenance of the sewage treatment plant in Golden Gate Park.

Made surveys and maps of 8 playgrounds.

FOR DEPARTMENT OF PUBLIC HEALTH

Prepared plans and supervised the start of construction of a new 300,000 gallon steel water tank at the Laguna Honda Home, replacing an old wood stave tank.

Made periodic visits to the Hassler Home in San Mateo County to advise on operation and maintenance of the sewage treatment plant.

FOR SHERIFF'S DEPARTMENT

Made inspections and tests at regular intervals for control of operation of the sewage treatment plant at County Jail No. 2 in San Mateo County.

FOR BOARD OF EDUCATION

Made surveys and maps of 7 school sites.

FOR JUVENILE COURT DEPARTMENT

Prepared final plans and specifications for a sewage treatment plant after altering preliminary plans so as to minimize cost. A construction contract was awarded on June 26, 1950 for \$39,610.

FOR PUBLIC LIBRARY COMMISSION

Made 2 lot surveys for branch library sites.

FOR CHIEF ADMINISTRATIVE OFFICER

Developed complete plans for the Farmers' Market covering marketing sheds, roads, drainage, water supply and administration building.

FOR FIRE DEPARTMENT

Prepared plans for a Hose Wagon Monitor Battery.

Prepared plans for a 7000-foot extension of a 12-inch pressure line into the Apparel City area.

TESTING

The laboratory and Testing section made numerous examinations and tests for other bureaus and departments as indicated below.

	1948-49	1949-50
Bureau of Architecture	89	318
Other Bureaus of the Department	345	287
Recreation and Park Department	28	252
Public Utilities Commission	511	323
Purchasing Department	69	70
Fire Department	80	60
Sub-Total	1122	1310
Bureau of Engineering	1232	1095
TOTAL	2354	2405

GARBAGE DISPOSAL

DISPOSAL SITE

Since 1932 all household garbage and refuse in San Francisco has been disposed of by the sanitary fill method. The disposal site, owned by the Southern Pacific Company, is on tide flats on the shore of San Francisco Bay, just south of the San Francisco-San Mateo County Line. The area of the fill, based on a survey made by the railroad company in July, 1949, was 129.8 acres. Approximately eight additional acres are created each year, so the total area as of July 1, 1950 was about 138 acres. The owner has leased about 30 acres of the earliest filled land for commercial

and light industrial purposes, and buildings have been erected having a total area of about 84,000 square feet. All of the buildings are one story only and those not built on piles are showing some signs of settlement.

COLLECTION AND TRANSPORTATION

Garbage and refuse is picked up at backdoors by two privately owned scavenger companies. No segregation is required on the part of the householder, but some salvaging is done by the collectors on the way to the dump.

The two companies use altogether 120 trucks and make an average of 250 trips per day. The maximum haul is about 14 miles and the average haul 8 miles. The trucks carry an average of 20 cubic yards and the total daily collection averages about 850 tons. The scavenger companies operate six days a week or about 312 days a year.

FILL AND COVER OPERATION

The Sanitary Fill Company, which is controlled by the two scavenger companies, handles the fill and cover operation at the fill site through a contractor. The collection trucks dump their loads near the edge of the fill in piles about 3' or 4' high. Two large bulldozers then push it over the edge and level up the top. Cover material brought in by trucks from adjacent quarries is then spread over the garbage to a depth of 1½ ft. to 2 ft. Additional layers may be placed from time to time after several weeks or months of settlement. The Sanitary Fill Company has leased a total area of 300 acres for fill purposes and has acquired borrow-pit and quarry rights sufficient to furnish cover material for many years. Some delay is threatened in the use of the quarry site north of the sanitary fill due to the existence of temporary wartime housing units occupying a portion of the area.

STATISTICS

The quantities and costs which appear in the following tabulation on a calendar year basis are based on information furnished by the Contractor who handles the operation of the fill. They do not include administrative and overhead expenses of the Sanitary Fill Company which employs the Contractor. The Sanitary Fill Company is permitted by franchise to collect 90 cents per ton from the Scavenger companies.

SANITARY FILL STATISTICS
Calendar Years 1948 & 1949

	1948	1949
Total Income	\$228,685.57	\$234,933.98
Expenses		
Operations	175,249.00	188,230.30
Roads & Maintenance	10,010.00	3,512.00
Administration & Inspection	42,300.00	50,811.21
Total Expense	\$227,559.00	\$242,553.51
Garbage & Refuse Handled, Tons		
City of San Francisco	253,041.61 tons	255,640.18 tons
Other Sources	11,117.03	2,959.10
Total	264,158.64 tons	258,599.28 tons
Quantity per day, tons (312 days)	845 tons	830 tons
Cost of disposal per ton	\$ 0.862	\$ 0.938
Cover Material		
Quantity Used, Cu. Yds.	174,590 cu.yds.	198,350 cu.yds.
Cost, Total	\$ 72,126.00	\$ 79,013.00
Cost per Cu. Yd.	\$ 0.413	\$ 0.399
Quantity per ton of garbage and refuse, cu. yds.	.661 cu.yds.	.767 cu.yds
Truckloads of garbage & refuse	74,650	77,450
Average weight per load, tons	3.54 tons	3.34 tons

SEWAGE PUMPING STATIONS

The sewage system of San Francisco includes at the present time thirteen pumping stations, one of which forms a part of Richmond-Sunset sewage treatment plant. The remaining 12 stations are operated under the supervision of the Electrical Section of the Division of Design. Table I of Appendix IV lists these 12 pumping stations and gives pertinent data as to their size, capacity, approximate cost and function. Tables II to XI, inclusive, of the same appendix gives in detail the operating costs of the various pumping stations. Details of the operation of the Richmond-Sunset Station are included in the description of the operation of the treatment plant.

The pumping stations are located in low-lying areas of the City, which cannot be drained by gravity into existing main sewers. Their capacities are sufficient to handle all sanitary sewage and, in addition, to take care of a portion of rainfall run-off in order to prevent pollution of shore-waters by the first scourings from the streets. Generally the stations are provided with overflow spillways so that run-off beyond the capacity of the station is discharged directly into the ocean or bay. In most cases the stations have sufficient capacities so that at least one pumping unit can be shut down to permit repairs.

All of the pumping stations have automatic float controls. At two of the larger stations, namely, Marina and Commercial, operators are on duty during two eight-hour shifts per day to perform necessary maintenance work and make required adjustments. At each of two other stations - Sea Cliff No. 2 and Parkmerced - an operator is on duty for a single shift each day. The operating staff during the year included:

- 1 Assistant Engineer I, Electrical
- 2 Operating Engineers
- 5 Junior Operating Engineers

REPAIRS AND REPLACEMENTS

During the past fiscal year, in addition to routine maintenance repairs and maintenance, the following major repairs and improvements were made at the stations indicated.

Commercial Street Station - The automatic float control system was replaced with a new up-to-date control arrangement. The standby gasoline driven emergency pump, was dismantled for

inspection, worn parts replaced, new foot valve installed.

Marina Station - Two of the main pumps was completely overhauled. The entrance trap doors were replaced with new ones, made of aluminum.

NEW STATION COMPLETED

The new Fulton Street pumping station was completed and accepted in May 1950. The station is located in the edge of Golden Gate Park on the south side of Fulton Street opposite 48th Avenue. The sanitary area tributary to this station comprises about 82 acres lying west of 46th Avenue and north of Fulton St. Sewage from this area, which formerly entered the Mile Rock sewer outlet untreated, is now lifted into diversion sewer leading to the Richmond-Sunset sewage treatment plant. The construction of the station involved deep and difficult excavation below the existing ground water level.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

The Richmond-Sunset Sewage Treatment Plant treats the sanitary sewage from the Richmond and Sunset Districts covering an area of 8,060 acres with a population of approximately 230,000. In May 1950, the 48th Avenue and Fulton Street Pumping Station, serving a small area west of 46th Avenue, was placed in operation. Since this station has been in operation, no sewage is discharged to the bay or ocean waters from the city sewers except during rains.

The districts are primarily residential with a few light but no heavy industrial establishments. At the treatment plant oil, grease, other floating material, grit and settleable solids are removed. The effluent is chlorinated for bacterial disinfection and is discharged at the shore line opposite Mile Rock where tidal activity provides ample dilution. This treatment eliminates sewage pollution of the ocean waters and deposits of sewage solids along the north and west shores westerly from Fort Point. Bacteriological tests show the beach waters safe for bathing except at times of storm overflow. The sludge removed is digested, washed, partially de-watered, and used as fertilizer in City parks.

The plant site occupies an area of approximately four acres in Golden Gate Park near the South Windmill. The main structures

of the plant are:

Water Storage Building

Pretreatment Building

Measuring Flumes

Bar Racks

Grit Grease Tanks

Chlorinators

Mixing and Sedimentation Building

Sludge Thickeners

Mixing Tanks

Sedimentation Tanks

Digesters and Control House

Main Building

Sunset Pumping Station

Elutriation System

Vacuum Filters

Boilers

Laboratory

Storage and Shop

Administration

Garage

The plant functions are shown on the Flow Diagram and operating data are given in the Summary of Operation.

LABORATORY

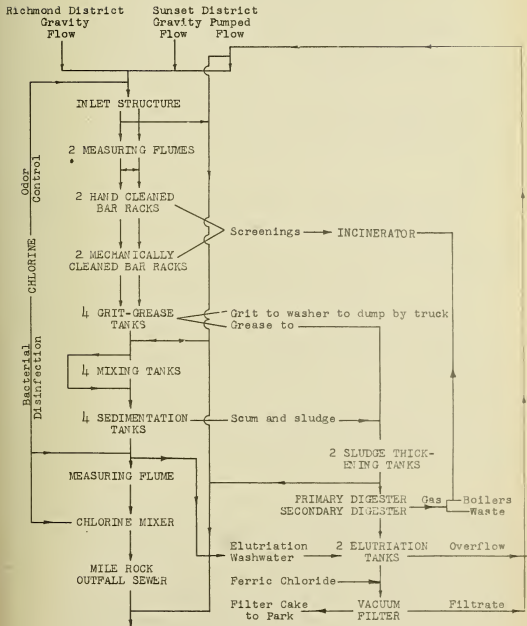
Approximately 14,100 routine and special analyses were made during the year as shown in the following table:

Regular Routine Analyses

Daily:

Raw sewage and plant effluent (24-hr composites):
suspended solids, alkalinity, chlorides, conductivity

RICHMOND-SUNSET SEWAGE TREATMENT PLANT FLOW DIAGRAM



Raw sludge (24-hr composites): solids, volatile matter

Digested sludge (2 levels each digester): solids, volatile matter, alkalinity, pH

Elutriated sludge (filter run composites): solids, volatile matter, alkalinity, specific gravity

Filter cake (filter run composites): solids, pH

Ferric chloride for filter operation: pounds ferric chloride per gallon

Digester gas: density

Bi-weekly:

Raw sewage and plant effluent (24-hr composites):
5-day BOD

Weekly:

Bacteriological tests of plant effluent and beach water at Bakers Beach, China Beach, the Great Highway opposite Cabrillo Street, Lincoln Way, and Vicente Street

Monthly:

Filter cake composites: nitrogen, phosphorus, humus

Sand from sand washer hoppers: volatile matter, sieve analyses, specific gravity

Digester: solids and volatile matter inventory

Miscellaneous:

Ferric chloride shipments received: per cent ferric chloride, specific gravity

Special Analyses and Investigations

1. Effect on effluent chlorine residual of method of adding chlorinating solution.
2. Investigation of factors causing paint failure in Sedimentation Building.
3. Establishment of procedure for testing domestic garbage grinders for conformance with requirements of City Ordinance and testing units submitted by four manufacturers.
4. Effect of single stage elutriation of sludge transferred from primary digester on secondary digestion.

5. Research on methods of analyses in cooperation with the Committee on Standard Methods of the Federation of Sewage Works Associations.
6. Field tests and advisory service on operation of activated sludge treatment plant at County Jail #2 and sewage treatment plant at Hassler Health Home, both in San Mateo County.
7. Bacteriological tests of bay waters at 23 sampling stations from the southern boundary of the City to the Presidio starting on April 24, 1950. Samples are taken bi-weekly at 10 stations and weekly at 13 stations. The purpose of this program is to measure the existing levels of pollution under varying tidal and seasonal conditions. This information will be used to evaluate the effectiveness of treatment to be provided at the North Point and Southeast Sewage Treatment Plants and to adjust plant operations to meet the varying conditions.

IMPROVEMENTS

Main Building

Constructed a wood lattice windbreak at the northeast corner of the Main Building to protect plants and shrubbery along the east side of building from wind damage.

Pre-Treatment Building

A new 10' x 6' x 6' brick screenings incinerator for disposing of screenings removed on the bar racks and in the Sunset sump was constructed in the Blower Room in the building basement. Screenings are fed manually into the incinerator from the operating floor through a vertical chute discharging onto a 3' x 4' brick hearth. Once a day the material on the hearth is moved forward onto a 3' x 4' grate for removal of ashes and other debris. Digester gas having a heating value of approximately 600 BTU per cu. ft. is used as auxiliary fuel.

Approximately 9 cfm of gas is required to incinerate 2 cu. ft. per hour screenings containing approximately 70% moisture by weight and 4% ash by volume. The incinerator is vented through a 10 inch stack terminating 4 feet above the building roof, which stack is connected at the second floor into the suction of a centrifugal blower having a capacity of 1,000 cfm free air at 70° F and 32 oz. gauge pressure. The blower removes all fumes from the incinerator and draws in cool air from the atmosphere at the top of the stack. The mixture is discharged through a pipe diffusion system in the influent

channels into the flowing sewage stream which condenses evaporated moisture, absorbs odorous gases, and removes fly ash providing at the same time, agitation in the channels for preventing grit deposition at low flows. In event of blower failure, the gases discharge through the stack to the atmosphere.

The incinerator was placed in service on March 31, 1950, and has solved the problem of screenings disposal very satisfactorily. The old trash incinerator used previously for this purpose had deteriorated almost to the point of uselessness.

OPERATION AND MAINTENANCE

Personnel

- 1 Superintendent
- 1 Assistant Superintendent and Chemist
- 1 Water Chemist*
- 1 Clerk-Stenographer
- 1 Chief Operating Engineer*
- 6 Operating Engineers
 - 5 on shift
 - 1 on relief and maintenance
- 5 Jr. Operating Engineers
 - 4 on shift
 - 1 on relief and maintenance
- 2 Laborers
- 1 Truck driver

Total 19

* 5½ days per week - All others 5 days per week

Operation

The plant was operated continuously 24 hours a day on a three-shift basis. As usual, the Sunset Pumping Station was bypassed during storms in the winter rainy season in order to avoid accumulation of excessive amounts of sand in the sump. Minor repairs to treatment units were scheduled in a manner so as not to adversely effect normal treatment.

Single stage elutriation of sludge transferred from the primary to the secondary digester was used during the first nine months of the fiscal year. This was discontinued on April 1, 1950

and sludge transferred directly from the primary to the secondary digester in order that the relative merits of the two methods of operation might be compared. It is too early to draw definite conclusions, but it appears intermediate elutriation produces a clearer supernatant and a more concentrated sludge in the secondary digester, and adds flexibility to the operation of the digestion system.

Sludge for vacuum filtration was withdrawn to two-stage elutriation from the bottom of the secondary digester from July 1 to August 16, 1949; from the bottom of the primary digester from August 17, 1949 to March 30, 1950; and from the bottom of the secondary digester for the balance of the year.

Sludge re-circulated over the top of the primary digester was taken from the bottom of the secondary digester from August 17, 1949 to March 30, 1950 and from the bottom of the primary digester for the balance of the year.

Maintenance

The regular schedules of maintenance set up in preceding years have been carried on. Some functions, such as general inspection, lubrication, etc., are regularly assigned duties of plant operating personnel. Plant maintenance forces or other City forces perform periodic inspection, maintenance and repair. The main items are shown on the following schedule:

Weekly:

- Air filters - clean

Monthly:

- Raw sludge pumps - wearing rings

Quarterly:

- Sand pumps - linings
- Seeding pump - wearing rings
- Ferric chloride pump - impeller, shaft

Semi-annually:

- Sewage pumps
- Bar racks - wear plates on rake shoes
- Vacuum filter - filter cloth
- Vacuum filter appurtenances
- Blowers
- Ball bearing motors - grease change
- Boilers - wash

Annually:

Chlorinators

Meters

Tank drives, chains, etc. - links, sprockets

Electrical Work:

Switchboards, panels, electrical connections - maintained by Bureau of Building Repair electricians, working approximately five days per month.

Painting:

Necessary painting of metal work, walls, etc., by Bureau of Building Repair painters as required.

Other Work:

Truck repair, machine work, by Purchasing Department Shops. Carpentry, plumbing, sheet metal work, etc., by Bureau of Building Repair.

In addition, the following special maintenance work was done by other than City Forces:

1. Re-galvanized approximately 1,400 sq. ft. of gratings in the Pre-Treatment and Sedimentation Buildings.
2. Renewed diaphragms, repaired, and re-calibrated two digester gas meters.
3. Installed bladeless type impeller in one Fairbanks Morse centrifugal sludge pump.
4. Let contract for re-painting corroded areas on laps, edges, and flanges of ventilating ducts in Sedimentation Building coated with special plastic paint.

Replacement Parts

A stock of spare parts is kept on hand. Part repairs requiring machine work beyond capacity of plant forces are done by Purchasing Department Shops.

SUMMARY OF OPERATION

(For details and costs refer to tables in Appendix V)

Sewage Flows:

Millions of gallons, by gravity (365 days)	2,809.8
pumped (329.2 days)	1,677.1
total	4,486.9
Average daily flow, ^a mgd, by gravity	7.7
pumped	5.1
total	12.8

Screenings, cu. ft.: (Sunset Pumping Station not included)

Total	6,853
Per million gallons	1.53

Sand, cu. yd.: from grit tanks	2,275
from Sunset Pumping Station	804
total	3,079
average per million gallons	0.69

Grease, gallons: from grit grease tanks	333,300
from other units	Not determined

Chlorination, lb.: pre	121,850
post	319,280
total	441,130
per million gallons, pre	30
per million gallons, post ^b	90

Sedimentation:

Suspended solids, ppm, raw	280
effluent	82
per cent removed	71
5-day BOD, ppm, raw	270
effluent	140
per cent removed	48
Raw sludge to digester, gallons	25,848,200
dry solids, lb.	8,811,500
total solids, %	4.06
volatile solids, %	82.4

Digestion:

Sludge to elutriation, ^c	gallons	8,405,600
	dry solids, lb.	2,333,400
	total solids, %	3.30
	volatile solids, %	61.3
Gas production, metered, cu. ft., to boilers ^d		37,810,000
	to waste	32,459,000
	total	70,269,000

Vacuum Filtration:

Hours operated		1,678
Sludge filtered, gallons		5,925,700
	dry solids, lb.	2,176,300
	total solids, %	4.45
	volatile solids, %	60.8
Filtrate, total solids, %		0.29
Ferric Chloride, lb.		67,350
	% on dry solids	3.09
Filter cake, lb.		7,330,800
	dry solids, %	29.7

a For actual time of operation.

b For chlorinated flows only.

c Metered quantity only; supernatant overflow not included.

d Corrected for period when meter not registering correctly.

INDUSTRIAL WASTE SURVEY

Activity during the year was confined to revisiting several industries surveyed last year whose wastes were causing stoppage or excessive deposits in sewers. In each case, remedial measures were suggested which corrected the condition.

This Bureau in cooperation with the Bureau of Sewer Repair also prepared a tentative draft for revising those sections of the Municipal Code pertaining to the use of sewers and the disposal of industrial wastes.

FUNCTIONS

The Bureau examines and reports on all applications for permits submitted to the Department of Public Works for new buildings, alterations to existing buildings, billboards and signs (electric and non-electric); the bureau inspects all this work as it progresses, makes final inspection and issues Certificates of Final Completion when the work is finished.

There are four "called inspections" on buildings:

- a. Foundations or other concrete forms must be inspected and approved before concrete is poured.
- b. Inspection before interior lathing. This is to see that all bracing, framing and fire stops are installed.
- c. Inspection before exterior or structural plaster is in place.
- d. Final inspection prior to occupancy.

The Bureau cooperates in consultation with architects, engineers, contractors and home owners in the preliminary stages of the preparation of their plans, whether for new buildings or for alterations to existing buildings. It studies and reports on legislation affecting building matters and proposes new legislation as required.

The Bureau examines and reports on various public building construction to the end that conformity with our Building Code is attained.

The Electrical Inspection Group of the Department of Electricity was assigned to the Department of Public Works on November 1, 1949, and further assigned by the Director on the same date to the Bureau of Building Inspection.

The electrical inspection functions are in accordance with existing ordinances dealing with electrical hazards to life and property.

State of California laws require that the electrical installation of wiring circuits, fixtures, signs, motors and electrical appliances be made by contractors licensed by the State, and San Francisco ordinances require that such licensed contractors be registered with the city. This is handled by this section of the bureau. Industrial plants which have their own plant electricians must also register with the bureau.

Primarily, it is the duty of the bureau to regulate and supervise the installation of interior electric wiring of commercial, industrial and residential buildings, and to insure by frequent and adequate inspection that the standards provided for in City ordinances, State and National Codes are maintained. Closely tied in with the inspection of interior wiring of buildings are other activities of the bureau made necessary by the provisions of electrical ordinances affecting other City departments, and which entail cooperation with the Fire Prevention Bureau, Police Department, Health Department, and with the Division of Industrial Safety of the State of California.

All spray painting establishments in the City of San Francisco are licensed through the Fire Prevention Bureau, and before licenses are issued the electrical work connected therewith must be approved by this bureau.

Reports of fire presumably caused by defective electrical installations and all places reported to be of potential electrical hazard are also checked by the electrical inspectors.

Coin operated amusement devices with electrical controls are licensed by the Police Department, and before issuance of permit, are required to meet the approval of the electrical inspector.

Night clubs and places of public assembly are licensed through the Health Department, and before a permit to operate is granted the requirements of this bureau in regard to adequate lighting and emergency lighting must be complied with.

A copy of all complaints and violations of the Electrical Safety Orders of the State of California issued to property owners is filed with this bureau, is checked and verified by the electrical inspectors, and is held in the files until final approval is made.

PERSONNEL

The personnel of this bureau as of June 30, 1950, consists of the following classifications:

18	A106	Building Inspectors
1	A110	Supervising Construction Inspector
2	B222	General Clerks
4	B408	General Clerk Stenographers
1	E2	Line Inspector
18	E4	Electrical Inspectors
1	E8	Chief Electrical Inspector
3	F410a	Engineers, Civil
1	F412a	Senior Engineer, Civil
1	F560	Superintendent
2	M158	Boiler Inspectors
52	Total	

Personnel Losses

On December 1, 1949, this bureau lost the services by retirement of Mr. George W. Marsh and Mr. Louis Ross. Mr. Marsh had been assigned to this bureau since 1924. His host of friends is not confined alone to the city government but almost the whole city. He has done much for the Bureau as such, and for each individual. Mr. Ross has served with both the Bureau of Architecture and Bureau of Building Inspection. Both have served faithfully and well and the best wishes of all of us are extended to them both.

EQUIPMENT

29 Passenger Automobiles

ORGANIZATION

Superintendent - In addition to performing the duties of his office, he takes an active part in the deliberations of various departments of the City government as well as other organizations with reference to matters of building construction, the building code, and building safety.

Supervising Construction Inspector - Under general administrative direction acts as assistant to the Superintendent in the field; assigns and supervises the work of building inspectors; prepares records and reports; checks construction progress and performs related duties as required.

Building Inspectors - One building inspector assists the Supervising Construction Inspector. He assists the public at the counter and provides them with the information they seek concerning various building regulations.

One building inspector represents the Director, Department of Public Works, on all cases coming before the Board of Permit Appeals with the exception of new construction. He inspects and reports on all night clubs and dance halls, and condemnations, when requested by the Police Department and Department of Public Health. He performs other related duties as required.

One building inspector examines all plans and details for new construction and estimates the cost thereof. He also represents the Director, Department of Public Works on all cases coming before the Board of Permit Appeals which concern new construction.

One inspector is assigned to the Metropolitan Park-Merced Housing Project and the Stoneson Housing Project. These projects

represent approximately \$30,000,000 worth of construction. It was necessary to have a building inspector on these jobs constantly in order to provide thorough and continuous inspection of such major construction. It was impossible for a district inspector properly to take care of such a project in addition to his other duties; furthermore, it eliminates costly delays on the part of the contractors. With a building inspector continuously on the job the owners are enabled to prosecute their work in an orderly, systematic and economical manner.

Fourteen building inspectors are assigned to definite districts into which the city is divided and are charged with the responsibility for inspection work in their respective districts. This includes new construction of all types; alterations, billboards and signs. They report on all applications for construction in their districts prior to examination by the divisions of the bureau, prepare and post Certificates of Final Completion, check and follow up complaints, interview property owners, and appear before courts in matters of condemnation and prosecution.

Boiler Inspectors - They make all investigations, inspections and reports pertaining to construction of steam boilers and air pressure tanks.

Senior Engineer (Civil), acts as Chief Structural Engineer and as principal assistant to the Superintendent; has wide latitude for independent and unreviewed action and decisions in establishing general engineering policies; initiates and makes studies of Building Code with a view to making beneficial changes for ever-changing and new materials of construction and for clarification of the code; supervises the work of the other engineers in the bureau, and performs related duties as required.

Structural Engineers (Civil) - They check and report on all plans pertaining to structural engineering, make field inspections, follow up matters concerning structural safety brought to their attention by the Supervising Construction Inspector or the district building inspectors, and assist other departments or bureaus in structural matters.

Clerical Force - Performs general and varied stenographic work, maintains records and files. Performs various related duties as required.

Chief Electrical Inspector - Under general direction assigns, supervises and reviews the work of electrical inspectors, approves or disapproves plans and specifications for electrical installations, supervises the maintenance of inspection records, makes required reports and performs related duties as required.

Two electrical inspectors are detailed to the enforcement of the Electrical Sales Ordinance. This ordinance governs the sale, display, or giving away as a premium of all electrical material, devices and appliances designed for attachment to, or installation in or on any electrical circuit or system for light, heat or power. This entails visiting all retail stores, premium stores, factory agents, jobbers, manufacturers, and wholesalers to inspect all materials, devices, and appliances, and to determine whether they are approved by this department before they can be sold, displayed, or installed in San Francisco. In many cases this means granting a provisional approval on articles that have been submitted to Underwriter's Laboratories, Inc. for testing, but testing not having been completed, allows a manufacturer to install or sell these appliances or materials with the proviso that any corrections required be made in the field. There are 2318 retail stores registered under this ordinance at present. These stores are visited regularly for the purpose of inspecting the merchandise, and as more merchants are going into business all the time and many ownerships are being changed it is necessary to visit these stores to check their registration and inspect their merchandise. During the fiscal year 1949-50 four thousand eight hundred eighty-five inspections were made by these two inspectors.

The Line Inspector inspects all installations, alterations, and maintenance of overhead lines owned and operated by public and private utilities used for the purpose of distributing electric power and light, communication and signal transmission, to see that they conform to the Rules for Overhead Line Construction (G.O.95) Public Utilities Commission, State of California, and the San Francisco Electrical Code. The line inspector also checks plans and specifications, and inspects on all overhead lines pertaining to trolley coach installations. He inspects temporary electrical street decorations when supported by trolley span wires, or messengers. He inspects installations of radio and television antennas. He checks all underground districts to see that they are kept clear of all overhead wires and cables. He checks the erection of scaffolds that may be in proximity to high voltage lines. During the fiscal year 1949-50, two hundred forty-eight pole permits were issued. During the fiscal year 1949-50 five thousand nine hundred fifty-six inspections were made by the line inspector.

Two electrical inspectors are assigned to office work. They handle all complaints and requests for information from the public.

Fourteen electrical inspectors are assigned to districts in the city and each handles all of the electrical work in his assigned district except those items under the Electrical Sales Ordinance.

BUILDING CONSTRUCTION

The volume of building construction for the following fiscal years was:

1947-1948	\$56,477,050
1948-1949	77,802,043
1949-1950	57,390,275

The above figures are submitted to show the comparison of the three years because the figure of \$77,802,043 carried the sum of approximately \$30,000,000 for the combined Metropolitan Park-Merced and the Stoneson apartment projects. Actually, the figure of \$57,390,275 for 1949-1950 shows an increase over the two previous years, when the apartment projects referred to above are omitted. Type 5 construction and alterations have increased.

WORK DONE

The extent of routine operations of this bureau for the fiscal year is set forth in the following tabulation taken from the records of the Central Permit Bureau.

Type of Construction	No. of Permits	Estimated Cost
1A	15	\$ 3,123,500
1B	23	10,390,419
2	1	4,200
3	28	2,310,130
4	41	686,604
5	2334	27,253,698
Alterations & Billboards	6898	13,621,724
Totals	9340	\$57,390,275

DESCRIPTION OF TYPES OF CONSTRUCTION

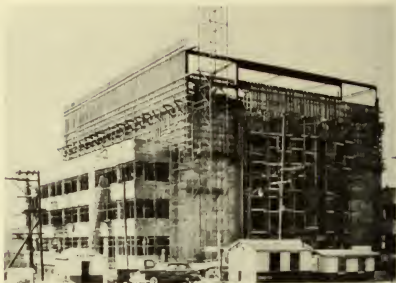
- Type 1A - Steel frame with reinforced concrete walls and floors. Fire resistive construction.
- Type 1B - Built entirely of reinforced concrete. Fire resistive construction.
- Type 2 - Heavy timber construction with exterior walls of masonry.
- Type 3 - Wood frame floors with exterior walls of masonry. Ordinary masonry construction.
- Type 4 - Light incombustible frame construction.
- Type 5 - Wood frame construction.

The following compilation of statistics of monthly reports indicates the volume of work done during the fiscal year for other than Electrical Inspection:

Number of inspections reported by inspectors of buildings	60,166
Number of projects remaining on which permits have been issued that have not been reported completed by inspectors of buildings	3,715
Number of complaints that have been reported adjusted by inspectors of buildings	2,731
Number of inspections reported by inspectors of boilers	2,923
Number of projects remaining on which permits have been issued that have not been reported completed by inspectors of boilers	12
Number of complaints and requests for information recorded	71
Number of applications for permits examined by and approved by structural engineers	3,995
Number of applications for permits pending	65
Number of applications for permits examined and approved by plan checker	2,614
Miles traveled during the year by passenger cars on inspection service	158,635

The following compilation of statistics indicates the volume of work done during the fiscal year for the Electrical Inspection:

Permits issued	18,756
Inspections made	57,118
Complaints investigated	8,040
Installations uncovered that were not recorded with the department ("sneaked in" jobs)	4,041
Installations in progress as at June 30, 1950	20,040
Installations completed	18,538
Pin ball machine inspections	1,415
Juke box inspections	1,871



Sailors Union of the Pacific
First and Fremont Streets
1949

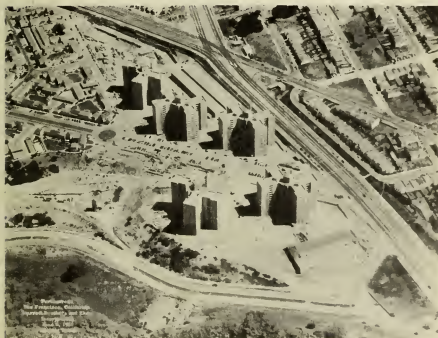


Metropolitan Park-Merced Towers Apartments
Junipero Serra Blvd. & Holloway Ave.
WEST BUILDINGS

Photograph thru courtesy of Starrett Bros.
and Eiken, General Contractors.



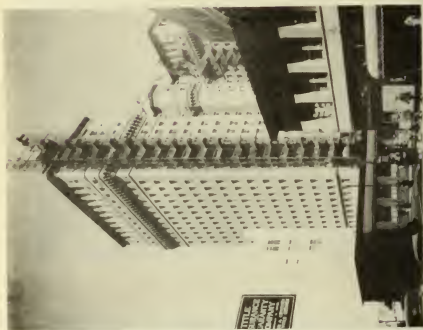
Sailors Union of the Pacific
First and Fremont Streets
1950



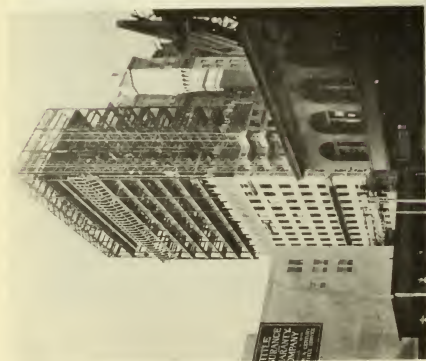
Metropolitan Park-Merced Towers Apartments
Junipero Serra Blvd. & Holloway Ave.

EAST BUILDINGS

Photograph thru courtesy of Starrett Bros.
and Eiken, General Contractors.



Standard Oil Building Addition
Bush and Sansome Streets
1950



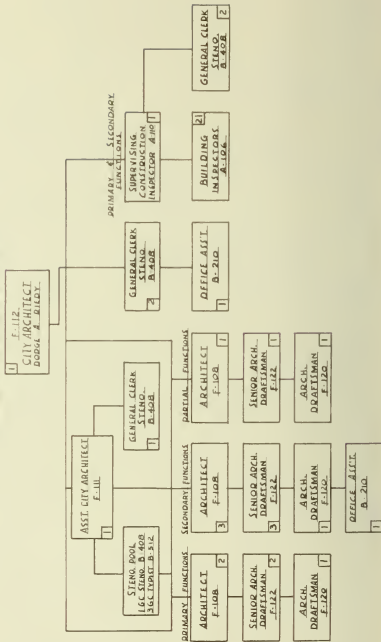
Standard Oil Building Addition
Bush and Sansome Streets
1949



Stonestown Shopping Center

Photograph thru courtesy of Stoneson Development Corp., San Francisco.

In center of above picture, a photograph of model of \$20,000,000 shopping center has been inserted.



BUREAU OF ARCHITECTURE
Dodge A. Riedy, City Architect

FUNCTIONS

The Bureau of Architecture is primarily concerned with complete architectural services requested by other Bureaus and Departments for alterations, general repairs, maintenance, modernization, and new construction.

A secondary function of the Bureau has to do with supervising, consulting, coordinating, estimating, and checking the civic work program of Architects under contract. This work has greatly increased during the past year and required a fifty per cent increase of staff.

Both types of services require complete inspection; on minor projects, part time service was furnished as required.

Partial architectural services such as design, planning, architectural detail drawings, and specifications for the Bureau of Engineering and Water Department increased the Bureau's volume of work.

GENERAL

This year was marked by a great expansion by the program development of the \$48,000,000 - 1948 School Bond Issue. Although this Bond Issue is set for a five year program, in the past year four million dollars of new school work is under construction. Thirty million dollars of new school work has been assigned to approximately 30 outside individual Architectural firms. These Architects were developing the plans at various stages from preliminary studies to completed contract drawings and specifications under this Bureau's supervision.

Practically all the school projects to be developed by outside Architects for the complete program have been assigned. A total of \$35,000,000 of new school construction is allotted for the above program.

The Modernization Program of the \$48,000,000.00 School Bond Issue is approximately \$5,000,000. Approximately 10% of this amount has been developed in various stages from preliminary drawings to construction contracts.

Special emphasis was placed on projects authorized by School Bond Issues and as a consequence, the normal maintenance, modernization, and alteration program was somewhat retarded.

Similar to the School Program, but on a smaller scale, projects for the Police, Library, Fire, and Juvenile Probation Departments have proceeded as rapidly as their respective programs could permit.

PERSONNEL

The total Staff of the Bureau increased from 31 to 50 during the year, a gain of 19.

Personnel at Beginning & End of Fiscal Year

	July 1, 1949	June 30, 1950
City Architect	1	1
Assistant City Architect	1	1
Architects	2	6
Senior Architectural Draftsmen	4	6
Draftsmen	2	3
Office Assistants	1	2
General Clerk Stenographers	5	6
General Clerk Typists	1	3
Supervising Construction Inspector	1	1
Building Inspectors	13	21
Total	31	50

WORK COMPLETED

Most of the work performed by the Bureau of Architecture during the fiscal year of 1949 - 1950 consisted of supervising, consulting, coordinating, estimating, and checking the civic work program of Architects under contract.

During the past fiscal year, the value of the work performed was as follows:

Work Completed	\$ 1,665,723.64
Contracts Under Construction	8,711,078.00
Work Under Preparation	30,811,466.00
	\$41,188,267.64

The segregation of this work by Departments for which the work was done is shown in the following table. Details of the class of work and the type of project will be found in Appendix II.

CURRENT DATA - SUMMARY

Showing all Work Completed, Contracts Under Construction, and Work Under Preparation - July 1, 1949 to June 30, 1950.

Work Completed

Board of Education

School Building Construction	\$368,846.63	
Miscellaneous Alterations	68,965.59	
Prefabricated Units	416,213.00	
Miscellaneous	131,301.94	\$985,327.16

Public Health

San Francisco Hospital	\$ 4,530.00	
Laguna Honda Home	33,585.00	
Central Emergency Hospital	14,046.70	
Hassler Health Home	16,182.00	68,343.70

Park Commission

M. H. DeYoung Museum	\$240,526.23	
Legion of Honor	10,976.60	251,502.83

Fire Department

General Construction	\$222,333.22	
Miscellaneous	18,568.50	240,901.72

City Hall	100,644.13
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Civic Center

Civic Auditorium	\$ 12,854.10	
Parking Authority	6,150.00	19,004.10
Sub-Total		\$1,665,723.64

Contracts Under Construction

Board of Education

1948 School Bond Issue	\$3,828,324.00	
School Bond Modernization	98,160.00	
Prefabricated Units	5,664.00	
Test Borings	4,739.00	\$3,936,887.00

Public Health

San Francisco Hospital	\$ 170,591.00	
Laguna Honda Home	24,743.00	
Health Centers	13,757.00	\$ 209,091.00

Fire Department

Alterations		15,779.00
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Police Department

Mission Police Station		142,800.00
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City Hall		90,914.00
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Park Commission

M. H. DeYoung Museum		17,667.00
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Department of Public Works

Maintenance Yard		515,402.00
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Juvenile Court

Youth Guidance Center		3,782,538.00
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Sub-Total		\$8,711,078.00
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Work Under Preparation

Board of Education

1948 School Bond Issue	\$29,095,180.00	
School Bond Modernization	565,000.00	\$29,660,180.00

Public Health

San Francisco Hospital	\$ 100,000.00	
Laguna Honda Home	4,000.00	104,000.00

Fire Department

New Construction		404,133.00
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Public Library

New Construction	\$ 483,585.00	
Alterations	15,000.00	498,585.00

Civic Center

Civic Auditorium	\$	25,000.00
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Park Commission

M. H. DeYoung Museum	\$ 6,000.00	
Golden Gate Park	42,568.00	48,568.00

Juvenile Court

Log Cabin Ranch	\$ 3,000.00	
Youth Guidance Center	28,000.00	31,000.00

Department of Public Works

Miscellaneous		40,000.00
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Sub-Total	\$30,811,466.00
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Grand-Total	\$41,188,267.64
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BUREAU OF SEWER REPAIR
Emile F. Muheim, Superintendent

The general topography of San Francisco is hilly, the highest point being approximately 900 feet above sea level. With the exception of several sewage pumping stations the sewage flows by gravity through outfalls into the ocean or bay. Since 1939 the sewage from the western slopes has been diverted to a treatment plant and the completion of the two treatment plants now under construction will practically put an end to disposal of raw sewage into the bay.

The sewage collection system is of the combined type that provides conveyance of rainfall runoff as well as sewage. Careful maintenance of the system is necessary to prevent flooding of properties during heavy rainfall.

FUNCTIONS

The Bureau of Sewer Repair maintains and repairs the sewage collection system, including manholes and catchbasins, installs and repairs side sewers between mains and traps, the latter generally being placed two feet inside the curb line, and cleans the sumps of all sewage pumping stations.

The sewage collection system consists of vitrified clay pipe, prefabricated reinforced concrete pipe, brick sewers, and monolithic reinforced concrete sewers. The larger sewers were formerly of brick or monolithic reinforced concrete, but the new installations include prefabricated reinforced concrete pipe up to 6'-9" in diameter. The vitrified clay pipe now being used is non-glazed.

Since April 1, 1950 the sewage pumping stations have come under the supervision of the Bureau of Sewer Repair.

PERSONNEL

The personnel of the Bureau of Sewer Repair on June 30, 1950 consisted of 138 employees, in the following classifications:

- 1 Superintendent
- 2 Assistant Superintendents
- 3 General Foremen
- 1 Engineering Inspector
- 1 Clerk
- 7 Bricklayers
- 12 Hodcarriers
- 50 Cribbers

33	Laborers
11	Chauffeurs
17	Sewer Cleaners
138	Total Personnel

ORGANIZATION

The Superintendent has two assistant superintendents who exercise direct supervision over three general foremen. The crews are employed eight hours per day, Monday through Friday, with a night shift on duty from 4:30 P.M. until 12:30 A.M.

On Saturdays, Sundays, and holidays, a maintenance truck is on duty to service lanterns and to inspect and care for requirements at current job sites. This truck is on call after normal work hours every day in the year.

Starting early in October and continuing throughout the winter, an emergency crew is on duty from 4:00 P.M. until Midnight on Saturdays, Sundays, and holidays. The crew consists of a sewer cleaner, laborer, panel-delivery type truck and driver and is equipped to take care of routine winter failures.

An assistant superintendent or a general foreman is on call at his home after normal work hours, at all times throughout the year.

A typical work day starts at about 7:30 A.M., when the general foremen arrive at the office to prepare orders for men arriving at 8:00 A.M. At 8:00 A.M., field crews ring in for materials, additional instructions, or assignment to a new location. At 8:00 A.M., eductor crews are dispatched to their regular districts or go on special assignments. Flushing crews go out on complaints, investigations, or their regular sewer maintenance. At 10:00 A.M., these men ring in for further instructions. In general, this routine is repeated in the afternoon.

During the day, the clerk answers telephone calls from citizens reporting holes in the street, plugged-up catch basins, sewers not functioning, and articles dropped into catch basins or through the plumbing fixtures, such as keys, rings, false teeth, and precious stones. Many of these articles are retrieved and returned to their owners.

At 4:45 P.M., the eductor and flushing crews report to the office with the results of the day's work. These reports are tabulated and distributed to the assistant superintendent or general foreman responsible for that particular phase of the work.

By this time, the night crew has reported and their instructions have been issued. Five o'clock sees the day officially closed. Complaints coming in after this hour and up until 12:30 A.M. are taken care of by the night crew. After 12:30 A.M. and until 8:00 A.M. the following morning, the material truck driver is on call for routine complaints. Complaints of a more serious nature are referred to the assistant superintendent or general foreman on call.

NUMBER OF JOBS

Complaints Investigated	8,451
Repairing Pipe Sewers	511
Repairing and Installing Side Sewers	854
Repairing Concrete Sewers	14
Repairing Brick Sewers	123
Repairing Catch Basins	193
Building Manholes	41
Building Catch Basins	23
Catch Basins Cleaned by Eductors	14,889
Cubic Yards of Silt Removed	14,119
Main Sewers Cleaned	166
Cubic Yards of Silt Removed	2,355
Repairs to Manholes	94

BUREAU OF SEWER REPAIR
Repairs to Main Sewers - 1949-1950
SUMMARY OF COSTS

	Labor	Material	Trucks	Total
Repairs to Pipe Sewers	\$130,335.00	\$17,946.02	\$12,529.36	\$160,810.38
Repairs to Brick Sewers	50,923.27	4,247.75	2,341.69	57,512.71
Repairs to Concrete Sewers	4,350.39	177.56	185.04	4,712.99
Building Manholes and Catchbasins	22,811.02	4,891.78	1,993.73	29,696.53
Repairs to Manholes	6,067.46	2,052.24	479.69	8,599.39
Repairs to Catchbasins	19,630.44	4,089.90	1,774.88	25,495.22
Cleaning with Eductors	120,212.05	2,543.77	14,043.57	136,799.39
Sewer Cleaning Hand Power	8,211.88	277.80	465.43	8,955.11
Sewer Cleaning Motor Equipment	69,618.62	2,948.42	6,556.33	79,123.37
Sewer Flushing	49,352.88	1,892.58	27,775.13	79,020.59
Miscellaneous Work	16,991.29	2,314.02	5,744.26	25,049.57
TOTAL EXPENDITURES	\$498,504.30	\$43,381.84	\$73,889.11	\$615,775.25

BUREAU OF SEWER REPAIR
Side Sewers Installed and Repaired - 1949-1950

SUMMARY OF COSTS

No. S/S	Deposit	Labor	Matl.	Cartage	Insptn.	Paving	Extras	Com- ressor	Over- head	Total	Refund	Excess
JUL 65	\$10400.00	\$4288.95	\$536.40	\$292.00	\$144.00	\$2038.50	\$129.80	\$108.00	\$1130.64	\$8668.29	\$2154.39	\$422.68
AUG 90	14140.00	5257.00	672.60	417.00	178.00	2647.00	179.51	123.00	1381.42	10855.53	3516.65	232.18
SEP 57	9327.00	3505.80	443.60	265.00	110.00	1593.00	144.04	65.00	922.42	7048.86	2337.88	59.74
OCT 61	11450.00	4730.24	517.40	287.00	128.00	1876.50	239.40	84.00	1179.39	9041.93	2800.77	392.70
NOV 64	10960.00	4287.00	564.60	328.00	128.00	2088.90	261.39	100.00	1158.44	8916.33	2276.09	232.42
DEC 54	10866.00	4252.84	473.00	315.00	138.00	1577.70	245.24	95.00	1065.17	8161.95	3044.18	340.13
JAN 51	9375.00	4084.22	458.20	270.00	106.00	1746.40	200.17	91.00	1050.89	8006.88	1701.75	333.63
FEB 61	10685.00	4881.50	534.80	335.00	130.00	1803.60	195.58	94.00	1136.17	9110.65	1995.57	421.22
MAR 97	13545.00	5428.90	661.40	386.00	192.00	2893.00	186.49	135.00	1456.94	11339.73	2554.76	349.49
APR 58	11000.00	4445.75	518.00	315.00	116.00	1817.10	164.80	91.00	1120.14	8587.79	2796.92	384.71
MAY 87	14200.00	5611.35	709.40	431.00	176.00	2835.60	330.74	133.00	1534.07	11761.16	2963.57	524.73
JUN 97	17255.00	6857.00	873.00	439.00	104.00	3413.00	308.31	133.00	1792.10	13919.41	3842.30	506.71
Totals												
842	\$57,630.55	\$4,080.00	\$4,080.00	\$26,330.30	\$1,252.00	\$115,418.51	\$2,200.34	\$31,984.83	\$14,927.79	\$31,984.83	\$31,984.83	\$31,984.83
	\$143,203.00	\$6,962.40	\$1,650.00	\$2,585.47	\$14,927.79	\$31,984.83	\$31,984.83	\$31,984.83	\$31,984.83	\$31,984.83	\$31,984.83	\$31,984.83

Bureau of Sewer Repair

W. S. Merrill, Acting General Superintendent

The Bureau of Streets is responsible for the maintenance, repair and cleaning of all streets and boulevards, including State Highways within the City and County of San Francisco, except those streets abutting the water-front that are under the jurisdiction of the State Board of Harbor Commissioners as established by the statutes of the Legislature of the State of California. The work includes the maintenance and repair of wooden and concrete stairways, pipe railings which are part of the street in hilly regions, and the operation and maintenance of movable bridges at Third Street and Channel, Fourth Street and Channel, and Third Street and Islais Creek. The new bridge at Third Street and Islais Creek was opened to traffic in March, 1950.

The Bureau is divided into the two divisions of Street Repair and Street Cleaning. Operations of each division are presented separately.

Mr. Preston W. King, General Superintendent of Streets, retired from his position on November 29, 1949, after 40 years of meritorious city service.

DIVISION OF STREET REPAIR

FUNCTIONS

This division maintains over 800 miles of streets, resurfaces track areas of the Municipal Railway System, operates the City asphalt plant, operates and maintains the several bridges, and removes fallen trees, landslides material, and wind-blown sand from City streets.

The output of the asphalt plant for the year amounted to 39,533 tons, an increase of 9% over last year's output.

Repair and interdepartmental work for this year shows a slight increase over the previous period.

During the past year the division obtained the following new equipment: one Chevrolet Coupe, one 4-ton Roller, one 5-ton Truck and one 400-gallon Bitumul Spray Unit.

The increase in labor and material costs is slowly curtailing the extent of street resurfacing permitted under the Charter limitation of \$2,000 and may soon prevent the resurfacing of an entire 600-foot block by city forces.

PERSONNEL

Supervision

- 1 General Superintendent
- 1 Supervisor
- 3 General Foremen

Per Diem

- 1 Asphalt Plant Foreman
- 1 Asphalt Foreman Finisher
- 3 Mixer Dryermen
- 1 Stationary Engineer
- 11 Asphalt Sub-foremen Finishers
- 16 Asphalt Finishers
- 34 Asphalt Workers
- 3 H & P Engineers
- 3 Cement Finishers
- 5 Cement Finishers Helpers
- 3 Labor Foremen
- 56 Laborers
- 4 Granite Cutters
- 22 Chauffeurs
- 1 Caterpillar Operator
- 2 Watchmen
- 1 Paver

Bridges

- 1 Chief Engineer (half time)
- 7 Stationary Engineers
- 7 Watchmen
- 9 Hired Trucks

ORGANIZATION

Supervising

- 1 General Superintendent
- 1 Supervisor
- 3 General Foreman

Asphalt Plant

- 1 Plant Foreman
- 3 Dryer Mixers
- 1 Stationary Engineer
- 3 Laborers

Municipal Railway Work As needed - interdepartmental work order

Clean Up

- 3 Labor Foremen
- 2 Chauffeurs
- 16 Laborers

Crack Sealing	4 Asphalt Sub-foremen
	4 Chauffeurs
	20 Laborers
Compressor Units	3 Chauffeurs
	6 Laborers
Brick Repair	1 Paver
	1 Laborer
Curb Repair	1 Granite Cutter
	2 Laborers
	¼ Hired Truck
Curb Yard	3 Granite Cutters
	½ Hired Truck
Cement Repair	3 Cement Finishers
	5 Cement Helpers
	1 Chauffeur
Asphalt Repairs	1 Asphalt Foreman
	1 Asphalt Sub-foreman
	6 Asphalt Finishers
	6 Asphalt Workers
	2 H & P Engineers
	4 Chauffeurs
	1 Hired Truck
Asphalt Roving Crews	6 Asphalt Sub-foremen
	10 Asphalt Finishers
	28 Asphalt Workers
	1 H & P Engineer
	6 Chauffeurs
	5 Hired Trucks
Temporary Roads	1 Chauffeur
	1 Laborer
Corporation Yards	2 Laborers
Miscellaneous Work	1 Tractor Operator
	1 Hired Truck
	2 Watchmen
	5 Laborers
Bridges	13 Operating Engineers
	10 Watchmen

EQUIPMENT

6	Passenger Cars
4	1-ton Pickups
4	105 Cu. Ft. Compressors (Chassis Mounted)
1	105 Cu. Ft. Compressor Portable Trailer
18	5-ton Dump Trucks
4	5-ton Bitumul Spray Rigs
1	400-gallon Spray Tank Trailer
4	200-gallon Littleford Spray Tanks Trailer
1	Doane Low Bed Truck
1	8-ton Galion Roller
2	5-ton Galion Roller
1	4-ton Galion Roller
2	Littleford Trailer Rollers
1	McCormick Deering Tractor
1	Galion Road Blade
1	Sand Loader
2	Surface Heaters Motor Driven
1	Surface Heater Hand Operated

The total expenditures of the Division for the fiscal year 1949-50 were \$1,240,577.43 consisting of four main items, to wit:

Bridges	\$81,794.58
Asphalt Plant	164,967.56
Interdepartmental	229,389.56
General Repairs	764,425.73
	\$1,240,577.43

BRIDGES

PERSONNEL

1 Chief Engineer whose duties are divided between Bridges and the Bureau of Building Repair

Third St. Bridge	Fourth St. Bridge	Islais Creek Bridge*
3 Engineers	3 Engineers	3 Engineers
3 Watchmen	3 Watchmen	3 Watchmen
½ Engineer (Relief)	½ Engineer (Relief)	½ Engineer (Relief)
½ Watchman (Relief)	½ Watchman (Relief)	½ Watchman (Relief)

* This bridge shut down for reconstruction January 10, 1949 and was re-opened to traffic March 3, 1950.

COST OF OPERATION	Third St.	Fourth St.	Islais Creek
1949			New Bridge
July	\$ 3,188.14	\$ 3,150.01	Under Cons't
August	2,988.48	2,962.96	"
September	3,365.76	2,947.31	"
October	3,075.08	2,853.57	"
November	3,236.78	3,053.06	"
December	2,830.36	2,531.80	\$ 12.71
1950			
January	3,088.69	2,895.45	124.37
February	3,267.25	3,171.20	346.33
March	2,689.38	2,692.28	2,630.45
April	2,750.17	2,697.65	2,614.31
May	2,731.70	2,786.46	2,816.26
June	2,763.58	2,700.92	2,832.11
	\$35,975.37	\$34,442.67	\$11,376.54

Grand Total - \$81,794.58

BRIDGE OPENINGS

Month	3rd St. Bridge Openings for Month	4th St. Bridge Openings for Month	Islais Creek Bridge Openings for Month
July 1949	54	31	
Aug.	67	47	
Sept.	30	39	
Oct.	35	36	
Nov.	17	16	
Dec.	50	27	
Jan. 1950	49	22	
Feb.	35	25	
March	82	33	147
April	64	25	102
May	79	37	89
June	97	32	80
	659	370	418

ASPHALT PLANT OPERATIONS

PERSONNEL:

1 Foreman	1 Engineer-Stationary
3 Dry Mixermen	1 Night Engineer (laborer)
1 Laborer	
2 Asphalt Workers	

ASPHALT PLANT OPERATIONS

MONTH	TQNS	TOTAL COST	COST PER TON
July	2,314.85	\$10,084.47	\$4.356
August	4,005.50	15,023.15	3.750
September	3,282.40	13,280.28	4.045
October	3,634.25	14,561.07	4.006
November	3,356.90	14,162.25	4.218
December	3,034.25	12,911.25	4.255
January	2,340.40	11,288.85	4.823
February	3,059.95	12,691.45	4.147
March	3,991.60	15,629.76	3.915
April	3,425.20	14,578.78	4.256
May	2,774.60	13,343.34	4.809
June	4,312.80	17,412.91	4.037
TOTAL	39,532.70	\$164,967.56	\$4.218 *

Note:

Unit Cost: 1949-50 \$4.22
1948-49 4.15

\$.07 per ton increase over 1948-49 due
to increase in cost of materials

Tonnage: 1949-50 39,532.70
1948-49 36,246.25
Increase 3,286.45

Interdepartmental Work

	Crack Sealing Lineal Ft.	Paving Square Ft.	Amount
Major Streets	832,066	683,971	\$114,612.95
Side Sewers		28,735	28,004.13
Municipal Railway		267,100	44,261.77
State Highway No. 2	206,444	37,512	9,551.45
State Highway No. 56	120,200	102,258	7,174.96
State Highway No. 68	80,030	9,395	4,693.28
State Highway No. 55	53,100	22,500	2,258.20
Golden Gate Park		25,000	1,746.18
Building Repair		3,290	491.89
Controller			129.47
Hassler Health Farm		20,100	1,112.29
Education Department		170,916	14,567.46
Police Department			
Burning off traffic marks and setting post castings			667.68
S. F. Hospital		900	117.85
	1,291,840	1,371,677	\$229,389.56

* Average cost per ton for 12-month period.

GENERAL REPAIRS TO STREETS

	Lineal Ft.	Square Feet	Amount
Asphalt Repairs		3,635,454	\$380,956.48
Basalt Repairs		368	1,437.42
Brick Pavement		4,102	4,051.13
Concrete Pavement Repairs		3,807	4,934.91
Crack Sealing	1,713,183	433,282	86,037.73
Granite Curb Redressed	6,496		13,402.82
Granite Curb Reset	6,404		25,026.01
Concrete Curb Reset	9,733		19,939.32
Main Sewers Paving		35,174	28,495.11
Sidewalk		30,091	26,288.41
Temporary Roads			5,767.82
Department of Electricity			
Paving		443	352.48
Removal of Granite Curb			
Yard or Dump	488		524.07
*Miscellaneous Work			60,010.85
Work performed by other			
Departments			85,214.54
Miscellaneous Purchases			9,519.63
Equipment Purchases			12,467.00
	1,736,304	4,142,721	\$764,425.73

*This item includes the setting and removing of duck bumps, the construction and removal of safety zones, the cartage of equipment, removal of debris and sand from streets and the repair of various stairways and structures.



Fill and cover City dump on the tidelands
at Davidson and Jennings Streets.



This was a main sewer break and the Street Repair Department is removing the excess excavation for the Sewer Department. In the background is one of the Street Dept.'s new White Motor Trucks, cab over engine, with a reverse cab for the crew.

DIVISION OF STREET CLEANING

This division cleans and disposes of litter and debris collected from 1600 curb miles of paved and accepted streets. Similar service is extended to five underpasses, the Stockton Street Tunnel, 35 widely scattered pedestrian stairways, City-owned vacant lots and cleanups after celebrations, parades, and accidents. Operations on paved streets extend from curb to curb, as cleaning and disposal of sidewalk litter is delegated by law to fronting property owners or tenants.

The regular work week is 5-days or 40 hours, with a small night crew operating 5 nights a week. Skeleton crews work 4 hours on Saturday mornings, Saturday afternoons and Sunday mornings in the main business sections.

All of the debris is hauled to our two dumps located at Alemany Boulevard and Orizaba Street, and Davidson and Jennings Streets. The fill and cover method of disposal is used in the latter location.

Three garages are maintained as follows: 11th and Bryant Streets, 2350-19th Avenue, and 1725 Lombard Street.

PERSONNEL

The personnel as of June 30, 1950 was:

1	Supervisor of Street Cleaning
4	District Directors of Street Cleaning
1	Office Secretary
1	Gardener
1	Rent Truck Chauffeur
46	Chauffeurs
12	Labor Sub-foremen
287	Laborers (including 25 substitutes to fill "Off no pay" laborers)
353	Total

ROUTINE OPERATION

The City is divided into four major street cleaning districts and each district is under the immediate supervision of a district director.

Blockmen (132 laborers) are assigned to business areas and bordering vicinities, with each man responsible for sweeping his respective area.

There are 10 sweeping gangs and each one cleans a large residential district. A gang is under the direct supervision of a labor sub-foreman and has from 4 to 6 sweepers and a truck crew consisting of a chauffeur and two laborers or lumpers. Five can-truck crews pick up all street cans used by the blockmen in their daily work.

Five utility trucks are operated to service the motor sweepers, produce district, complaints, set assignments and emergencies.

Ten paper trucks cruise the city streets daily in their respective assigned areas to remove papers, cartons and litter.

The rented truck services the men with street brooms and scoops, and also services the motor sweepers with refill broom cores, as well as aiding in the matter of complaints.

One laborer is assigned to each dump and to the yard at 11th and Bryant Streets to keep the dumps in order and to handle yard necessities.

Seven motor sweeper routes operate daily on the boulevards, lesser parked sections and street islands. One is used in the South of Market section nightly.

Seven motor flushers are assigned to the main business sections daily with one flusher operating nightly to flush street islands, assigned streets, and to wash public monuments.

MAJOR ITEMS OF EQUIPMENT USED

Automotive

5	Passenger Cars
38	Dump Trucks (including 8 mechanical loaders and 3 racks)
8	Motor Flushers
10	Motor Sweepers
1	Rent Truck
6	Underpass Pumps
1	Power Lawn Mower
69	Total

Small Equipment

139	Street Can Sheds
1457	Street Cans
110	Street Buggies

OPERATIONAL "HIGHLIGHTS"

The budget for this fiscal year provided \$1,214,484 for street cleaning purposes.

Automotive equipment traveled a total of 364,764 miles.

About 250,000 cubic yards of street cleanings were transported to disposal areas.

Over 1400 street cans, including 730 in the 139 street can sheds, were emptied daily.

An average of four truck loads of refuse was cleaned from the streets of the produce district each day.

Nearly 60 truck loads of confetti and litter were collected and transported to disposal areas following the New Year's eight-hour cleanup in the downtown area and outer business district street areas. This operation required a force of 167 employees and a wage cost amounting to \$4,345.70.

A sum of \$47,380 was expended for repairs of automotive equipment, refills for motor sweeper main brooms, and for tires and tubes.

BUREAU OF BUILDING REPAIR
Walter C. Zecher, Acting Superintendent

FUNCTIONS

The Bureau of Building Repair furnishes labor and materials for the maintenance and alterations of city-owned buildings that are under control of the Director of Public Works. Similar services are performed for the Board of Education and other municipal departments under a work order procedure.

Labor and material are furnished for traffic striping, marking of pedestrian lanes at street intersections and marking curbs for loading and parking zones, bus stops and safety zones.

In addition to maintenance and alteration work, this Bureau furnishes operating personnel for the City Hall, Hall of Justice, Health Center Buildings, Emergency Hospitals, Police Stations and Fire Houses, and is also responsible for the operation of the Civic Center Power House which furnishes heat to the Civic Auditorium, Public Library, Health Center Buildings and City Hall.

PERSONNEL

Personnel employments include one superintendent, one assistant superintendent, seven general foremen, ten foremen supervising 190 to 194 mechanics, supplemented by additional seasonal workers representing 13 building crafts, employed in repair and alterations, and 124 employed in operational work.

Mr. R. A. Chisholm, Superintendent, retired on June 1, 1950 after 19 years of meritorious city service.

The classification of employees is:

Repairs and Alterations:

- 1 Superintendent
- 1 Assistant Superintendent
- 7 General Foremen
- 10 Foremen
- 28 Plumbers
- 16 Steamfitters
- 17 Sheet Metal Workers
- 17 Electricians
- 49 Painters
- 16 Cement Finishers and Cement Workers
- 32 Carpenters
- 6 Locksmiths
- 5 Glaziers
- 3 Plasterers
- 1 Tile Setter

- 2 Bricklayers
- 2 Hodcarriers
- 2 Laborers
- Additional Seasonal Workers as required

Operational:

- 2 Chief Operating Engineers
- 9 Operating Engineers
- 7 Junior Operating Engineers
- 16 Elevator Operators
- 1 Supervisor of Janitors
- 3 Foremen Janitors
- 2 Sub-foremen Janitors
- 71 Janitors
- 2 Janitresses
- 7 Window Cleaners
- 1 Sub-foreman Window Cleaner
- 3 Watchmen

ORGANIZATION

PLUMBING DIVISION: 29 Men

There are from 8 to 10 men on regular assignments to the City Hall, San Francisco Hospital, Laguna Honda Home, Hall of Justice, County Jail #2, and the Fire and Police Departments. At times additional men are assigned to take care of emergency calls. Miscellaneous repairs to plumbing facilities in school buildings require from 6 to 8 men. Interdepartmental work orders for repairs and new installations of plumbing facilities require employment of from 6 to 8 men. The Recreation and Park Department keeps two men employed responding to emergency calls. Four panel-body service trucks are assigned for use by this division.

STEAM DIVISION: 17 Men

This division takes care of gas and fuel-fired steam boilers, steam lines, traps, radiators and vacuum equipment and all accessories connected with heating systems. It also supervises the bricking of boilers in the school department during the summer vacation period.

One man each is assigned to the City Hall, Hall of Justice, San Francisco Hospital, and Laguna Honda Home and additional men are assigned as necessary for emergency calls. Miscellaneous repairs in school buildings normally require the services of two men with extra assignments for emergency calls. Interdepartmental work orders issued by the Municipal Railway, Fire, Health, Public Welfare, Real Estate and School Departments, Sheriff and Director

of Public Works keep 10 men employed. One panel-body service truck is assigned for use by this division.

SHEET METAL DIVISION: 18 Men

The work of this division includes the making of repairs to cornice work, ventilating systems, tile roofs, metal doors and making guards for machinery in school buildings according to recommendations of Safety Division and the fabrication of street cans, buggy pans and scoops for the Division of Street Cleaning. Men of the sheet metal craft are not assigned to any particular building. The division is assigned the use of one ½-ton service truck.

ELECTRICAL DIVISION: 20 Men

The electric shop is equipped for and accomplishes the repair of electric master clocks, clocks, telephone equipment, electrical appliances of varied descriptions and the rewinding of motors.

Two men are on regular assignment to service certain public buildings. One of these men is stationed at the City Hall serving the needs of the Hall, Retirement Board Building, City Planning Commission Building, Women's Detention Ward and Central Power House. The other man is located at the Hall of Justice serving the needs of that building, Coroner's Office, Central Police Station, City Prison and County Jails No. 1 and No. 3. These men take care of all emergency electrical trouble. Four men are on regular assignment to the school buildings to take care of emergency calls on telephone, intercommunicating systems, fire alarm, electric clock, sound and public address systems and general electric appliances. Eleven men are assigned to interdepartmental work orders making improvements and maintenance of electric facilities of all descriptions at Sewage Pumping Stations, Lift Bridges, Playgrounds and all Public Buildings requiring service. Four panel-body service trucks are assigned for use of this division.

PAINTING DIVISION: 51 Men

Two men are on regular assignments: one at the City Hall and one at the San Francisco Hospital for minor painting and touch up work. Two foremen and 33 men are assigned to interdepartmental work orders on various painting jobs for the following activities: Board of Education; Police, Fire, Public Welfare, Health and Real Estate Departments; Superior and Municipal Courts; War Memorial and the Department of Public Works (Budget items). Three foremen

and 12 men are assigned to street traffic painting under orders from the Bureau of Engineering. They are required to work on Sundays and during summer months they are out at daybreak to do striping in congested districts. The traffic painting personnel is divided into three crews each consisting of one foreman and four men. Their equipment includes two trucks with compressors; the striping buggy which is shoved by one of the trucks, and one truck which carries paint, flags and stands, stencils and other necessary equipment. Two foremen and 10 men have three trucks with compressors and spray equipment for striping crosswalks. Four men have two trucks for painting curbs under orders from the Police Department.

CEMENT WORK DIVISION: 20 Men

This division takes care of requests from all other divisions in the Bureau for such work as opening up ground for broken water pipes or choked sewers, drilling for electric conduits, and replacing walks and yards which have been opened. Three plasterers and a tile setter are normally required to follow up on jobs of other building crafts. Two men and one pickup truck are assigned for maintenance and repair of street signs. The equipment in use includes one 2-ton dump truck, one ½-ton pickup truck, two ¾-ton pickup trucks and three 60 c.f.m. portable compressors.

CARPENTRY DIVISION: 33 Men

There are from 5 to 6 men assigned to the Hall of Justice, City Hall, San Francisco Hospital and Fire Department for general repairs to these buildings. Six men are assigned to work on miscellaneous school requisitions taking care of various minor jobs of all descriptions. Eighteen men work on interdepartmental work orders received from City departments and commissions, making alterations and repairs. Three ½-ton service trucks are assigned for use by this division.

LOCKSMITH DIVISION: 7 Men

One man is assigned to the City Hall, Hall of Justice, and the Fire and Police Departments and he takes charge over the Locksmith's Shop and men. One man is assigned to work on miscellaneous school requisitions. Five men are on interdepartmental work orders issued by all other departments and commissions. The locksmiths' work consists of master keying public buildings, making keys, opening locks, installing and repairing locks and panic bars. The Recreation and School Departments' lock problems are very serious as master keys are often lost or stolen, and vandals are continually tampering with the locks. A service-equipped sedan is in use by this division.

GLAZING DIVISION: 7 Men

The work of this division involves replacing glass in public-owned buildings. Vandalism at the recreation centers and school buildings has been on the increase and at times we have been unable to immediately cope with the replacing of all broken windows. Two service-equipped trucks are used by this division.

STATISTICAL DATA

Operations for the year entailed the following expenditures:

Superintendence	\$ 34,783.60	
Building Operations	319,545.08	
Yard and Shops	24,608.07	
Carfare, Towel Service, etc.	7,825.28	
Emergency Leaves	8,451.43	
Vacations	4,595.68	
Fuel Oil	31,864.09	
Automotive Repair	3,697.94	\$435,371.17

Maintenance and repair of public buildings performed with funds allocated to the Bureau amounted to the following:

Fire Stations	\$ 20,506.56	
Police	4,929.69	
County Jails	8,105.85	
City Hall	44,842.51	
Hall of Justice	19,728.43	
S.F. Hospital and Laguna		
Honda Home	38,307.89	
Juvenile Detention Home	315.02	
Miscellaneous Structures	1,645.19	
Equipment Purchase	7,447.65	\$145,828.79

Work Order performance appeared in three general divisions:

Schools	\$827,608.32	
Traffic Striping	144,284.39	
Various	352,794.56	\$1,324,687.27

Total		\$1,905,887.23
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FUNCTIONS

The Central Permit Bureau is primarily a clerical and cashiering division of the Department of Public Works, set up for the reception and recordation of applications, processing the same to the necessary departments for approvals as prescribed by City ordinances, and the issuance of permits upon the obtainance of the necessary approvals.

The fiscal year 1949-1950 showed a marked increase in the activities of the bureau over the previous year. Permits issued, as shown on the following comparative statement, show an increase of 13.18% over the previous year. Of the permits issued for new construction, the majority were issued to speculative builders for home construction. Permits of Occupancy are issued by this bureau as prescribed by ordinance.

In addition to supervising the work of this division, the Supervisor also acts as Cashier for the Department of Public Works. All receipts to the department are cleared by him and transmitted to the City and County Treasurer for daily deposit, pursuant to Section 82 of the Charter.

During the fiscal year being reported upon, the Electrical Inspection Division of the Department of Electricity was placed under the jurisdiction of the Director of Public Works by the Chief Administrative Officer, inspection functions being assigned to the Superintendent of the Bureau of Building Inspection and the reception of applications, permit issuance and cashiering delegated to the Supervisor of the Central Permit Bureau.

PERSONNEL

The personnel of the Central Permit Bureau, as of June 30th, 1950, was as follows:

- 1 Supervisor
- 1 Cashier (Electrical Division)
- 1 Senior Clerk
- 1 Senior Clerk-Typist
- 1 General Clerk
- 1 General Clerk-Stenographer
- 5 General Clerk-Typists

WORK PERFORMED

Enumerated below are some of the major projects for which building permits were issued during the fiscal year being reported upon:

Project	Owner	Description	Families	Est. Cost
North Beach Public Housing Project	Housing Authority of S.F.	4 Story Type 1-B	226	\$ 2,367,500.00
Army Street Public Housing Project	Housing Authority of S.F.	4 Story Type 1-B	201	1,936,000.00
Chinatown Public Housing Project	Housing Authority of S.F.	3-6 & 7 Story Type 1-B	231	2,600,000.00
Apartment House (Private)	T. G. Meyer & Sons	13 Story Type 1-A	62	1,200,000.00
Kirkham Heights Apartments (Private)	Kirkham Heights Co.	11-2 & 3 Story Type 5	86	527,000.00

In addition to the above, applications are on file for which permits have not been issued, for the following commercial construction:

	Est. Cost
The Emporium Stonestown Store	\$2,000,000.00
Three Store Buildings in The Metropolitan Project	\$ 400,000.00

Comparative Statement of Permits Issued

Permits	1949-50	1948-49	1947-48
Buildings	8,896	7,767	8,887
Billboards	444	234	443
Boiler Installations	190	213	230
Boiler Inspections	1,370	684	1,099
House Moving	86	105	62
Demolitions	112	113	69
Flue Registrations	49	47	54
Flue Permits - New Buildings	36	46	42
Flue Permits - Old Buildings	115	107	104
Flue Coupon Books - New Buildings	79	84	119
Flue Coupon Books - Old Buildings	18	22	17
Construct Sidewalks	15	43	35
Street Space	1,395	1,262	1,588
Excavations	1,132	1,037	1,154
Side Sewers	898	934	1,078
Excess Costs - Side Sewers	176	269	313
Sidewalk Flower Markets	36	37	40
Blasting	6	7	7
Advertising	30	17	33
House Number Certificates	1,423	1,331	1,630
Payments for Surveys	47	61	45
Payments for Engineering Inspection	81	95	83
Payments for Street Improvement Bonds	40	31	-
Public Utilities Street Openings	9,317	8,171	7,452
Posting Notices	1,152	1,179	1,259
Total Number of Permits Issued	27,143	23,896	25,843

Refunds made from Special and Trust Funds

	1949-50		1948-49		1947-48	
	Refunds	Amount	Refunds	Amount	Refunds	Amount
Special Permit Fund						
(St. Space & Sub-Sidewalks)	528	\$ 23,540.00	1,807	\$ 71,410.00	1,065	\$ 40,265.00
House Moving Fund	12	1,200.00	74	7,400.00	47	4,700.00
Excavations	44	715.00	63	1,373.60	28	185.00
Side Sewers:						
Refunds to Depositors	726	31,461.48	988	37,408.94	970	36,041.64
Installation Costs						
credited to Gen. Fund		107,534.88		165,548.96		147,294.19
Deposits on Plans	1,729	45,985.00	1,521	26,435.00	893	20,150.00
Street Improvement Bonds	-	-	-	-	-	-
	3,039	\$210,436.36	4,453	\$309,576.50	3,003	\$248,635.83

Report of House Numbering Activities

	1949-1950		1948-1949		1947-1948	
	Refunds	Amount	Refunds	Amount	Refunds	Amount
House Numbers issued:						
Private Construction						
Investigations made						
and Complaints adjusted						
Changes in House Numbering ordered						
Inquiries from Banks, Title Insurance						
Companies, General Public, etc.						
answered	3,200		2,900		3,000	

Additional Non-Revenue Activities

	1949-1950		1948-1949		1947-1948	
	Refunds	Amount	Refunds	Amount	Refunds	Amount
Inquiries pertaining to age and class of buildings, and other information requiring reference to old applications on file						
Plans brought from the basement by request for reference purposes and photostating						
	9,250		8,750		9,500	
	1,500		1,325		1,200	

Cashier's Report

Source of Receipt

Street Space Permit Deposits	\$ 30,120.00
Sub-sidewalk Permit Deposits	-
House Moving Permit Deposits	-
Side Sewer Permit Deposits	162,021.36
Deposits on Plans	48,960.00

Excavation Permits

Special Deposits	\$ 2,165.00	
Inspection fees		
for Excav. (Special Deposits)	163.50	
(Public Utility Corporations)	16,607.25	
(Lowering Curbs, etc.)	3,828.00	22,763.75

Fees for:

Building Permits	211,262.30	
Billboard Permits	1,038.00	
Demolition Permits	1,330.00	
Boiler Installations	1,536.50	
Boiler Inspections	4,763.50	
Use of Street Space	25,884.67	
House Number Certificates	6,342.00	
House Moving Permits	1,720.00	
Flue Registrations	980.00	
Flues - New Buildings	18.00	
Flues - Old Buildings	230.00	
Flues - New Buildings (Coupons)	987.50	
Flues - Old Buildings (Coupons)	360.00	
Posting Notices	3,561.00	260,013.47
Fees - Sidewalk Flower Markets		1,296.00
Side Sewers - Excess Costs		3,899.06
Advertising Charges		4,378.17
Payments on Street Improvement Bonds		-
Payments on Street Improvement Bonds (Ord. of 1934)		4,352.28
Fees for Surveys		9,897.50
Fees for Inspections		18,919.67
Misc. (See Monthly Reports for itemized detail.)		7,452,336.74
Total Receipts		\$8,018,958.00

Note: 15 Sidewalk Permits issued.
No fees charged

Deposits with City and County Treasurer
Classified by Funds

General Fund

Street space & sub-sidewalks		\$ 30,120.00
House moving		
Side sewer deposits		162,021.36
Deposits on plans		48,960.00
Surveys	\$ 9,897.50	
Inspections	13,919.67	28,817.17
Excavations:		
Deposits	2,165.00	
Fees	20,598.75	22,763.75
Advertising		4,378.17
Street Improvement Fund		-
Street Improvement Fund (Ord. of 1934)		4,352.28
Side sewers - excess costs		3,899.06
Fees:		
Building permits	211,262.30	
Billboards	1,038.00	
Demolitions	1,330.00	
Street space	25,884.67	
House numbers	6,342.00	
House moving	1,720.00	
Boiler installations	1,536.50	
Boiler inspections	4,763.50	
Flue registrations	980.00	
Flues - new buildings	18.00	
Flues - old buildings	230.00	
Flues - new buildings (coupons)	987.50	
Flues - old buildings (coupons)	360.00	
Posting notices	3,561.00	260,013.47
Sidewalk flower markets - fees		1,296.00

Miscellaneous Funds

General Fund	363,703.04	
Spec. Road Improvement Fund	2,072,076.08	
State Highway Trust Fund	298,518.22	
Spec. Gas Tax Street Improvement Fund	1,883,661.90	
1944 Sewer Bond Fund	2,804,377.50	
1947 Street Improvement Bond Fund	30,000.00	7,452,336.74

Total Deposits with City and County Treasurer \$8,018,958.00

Classification of Building Permits Issued

Class or Type	No. of Permits	Estimated Cost	Fees
1-A	15	\$ 3,123,500	
1-B	23	10,390,419	
2	1	4,200	
3	28	2,310,130	
4	41	686,604	
5	2,334	27,253,698	
Alterations	6,454	13,570,219	
Totals	8,896	\$57,338,770	\$211,262.30
Billboards	444	51,505	1,038.00
Totals	9,340	\$57,390,275	\$212,300.30

(Total number of building applications received - - - - 10,599)

Flue Registrations and Permits

Flue Registrations	49	\$ 980.00
*Coupon Books-New Buildings	79	987.50
**Coupon Books-Old Buildings	18	360.00
Flue Permits-New Buildings	36	18.00
Flue Permits-Old Buildings	115	230.00
Totals	297	\$ 2,575.50

Miscellaneous Permits

To raze structures	112	\$ 1,330.00
To move buildings	86	1,720.00
Boiler installations	190	1,536.50
Boiler inspection requests	1,370	4,763.50
Posting notices	1,152	3,561.00
Totals	2,910	\$ 12,911.00
GRAND TOTALS	12,547	\$227,786.80

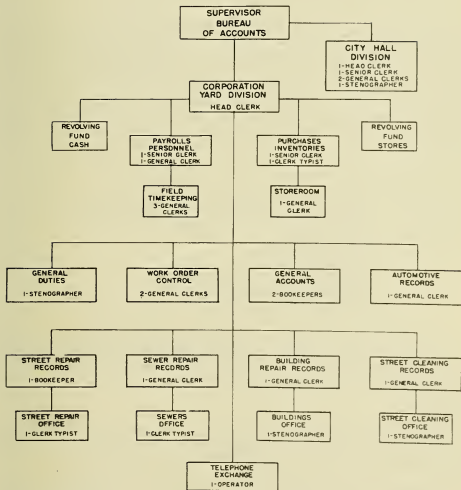
*New coupon books contain
25 prepaid coupons.

**Old coupon books contain
10 prepaid coupons.

Electrical Inspection Revenue

Month	Wiring Fees	Elect. Signs	Total	Contractors Registration	Plant Owners	GRAND TOTAL
July	\$ 6264.46	\$ 346.00	\$ 6610.46	\$ 200.00		\$ 6810.46
Aug.	6952.72	401.40	7354.12	100.00		7454.12
Sept.	5547.40	411.90	5959.30	200.00		6159.30
Oct.	6986.65	418.15	7404.80	200.00		7604.80
Nov.	5288.29	397.50	5685.79	50.00		5735.79
Dec.	6351.45	419.65	6771.10	1400.00	220.00	8391.10
Jan.	5117.30	347.40	5464.70	7600.00	390.00	13454.70
Feb.	5306.91	431.95	5738.86	1250.00	60.00	7048.86
Mar.	7988.30	516.15	8504.45	400.00	20.00	8924.45
Apr.	6567.96	483.60	7051.56	100.00	10.00	7161.56
May	7196.30	522.00	7718.30	400.00	10.00	8128.30
June	5963.65	439.20	6402.85	200.00		6602.85
Total	\$75531.39	\$5134.90	\$80666.29	\$12100.00	\$710.00	\$93476.29

ORGANIZATION CHART
BUREAU OF ACCOUNTS
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO
1949-50



PERSONNEL

SUPERVISOR	1
HEAD CLERK	2
SENIOR CLERKS	3
GENERAL CLERKS	13
BOOKKEEPERS	3
STENOGRAPHERS	9
TYPISTS	3
TELEPHONE OPERATORS	1
TOTAL	30

BUREAU OF ACCOUNTS
F. W. McKenzie, Supervisor

The Bureau of Accounts controls the budgetary and financial activities of the Department. It is the point of origin of documents dealing with the disbursement of funds, and their guidance through required procedures until final liquidation.

The operating functions of the Bureau embrace control of payroll procedure, personnel records and field-timekeeping; purchase order requisitions, sub-storeroom and inventories; automotive expenditures and gasoline and tire records; work order job costs and invoicing; side sewer job and refund accounts; State gas tax subventions; the cash revolving fund for the Department; the stores revolving fund; budget preparation and control, operations of the Corporation Yard telephone exchange; and the supplying of clerical service to all Bureaus of the Corporation Yard.

The personnel of 30 consist of:

- 1 Supervisor in charge of the Bureau
- 2 Head Clerks
- 3 Bookkeepers
- 3 Senior Clerks
- 13 General Clerks
- 4 General Clerk-Stenographers
- 3 General Clerk-Typists
- 1 Telephone Operator

Included in the general functions of the Bureau are three well defined sub-divisions: Payrolls and Personnel with 2 Senior Clerks and 5 assistants, Purchasing and Stores with a Senior Clerk and 3 assistants, Gas Tax Subventions with a Head Clerk and 3 assistants.

Three field timekeepers check outside operations for payroll verification and also act as paymasters on semi-monthly paydays, delivering pay warrants to employees on the job.

Reports to the Director of operations in Building Repair, Sewers, Street Repair and Street Cleaning are prepared monthly by the Bureau of Accounts from the records maintained in the Bureau.

Job costs pertaining to property of the City damaged by outside causes and falling within the scope of the Department's control, are compiled and forwarded for collection. These costs amounted to \$4,683.09 for the fiscal year and embraced 99 cases, covering damages to bridges, automotive equipment, street structures, traffic signals and prisoner-damage to police stations.

Transactions for the year totaled \$12,753,381.43, comprising:

Budgeted funds subject to control of \$8,489,457.00 - and appropriated to -

Bureau of Accounts	\$ 55,777.00
Bureau of Architecture	369,749.00
Bureau of Building Inspection	159,357.00
Bureau of Building Repair	740,702.00
Central Permit Bureau	33,208.00
Bureau of Engineering	395,610.00
Sewage Disposal Plant	133,371.00
Sewage Pumping Stations	55,045.00
General Office	80,830.00
Bureau of Sewer Repair	611,130.00
Bureau of Streets -	
Street Repair	821,959.00
Street Cleaning	1,282,246.00
Bridges	89,028.00
Gas Tax (Special Road Improvement)	1,064,945.00
Spec. Gas Tax-Street Improvement Fund	2,110,500.00
Gas Tax - Street Construction	486,000.00

Side sewer deposits for installation and repair amounted to 142,128.64
covering 889 permit deposits filed by property owners for work on 1103 separate house connections.

Interdepartmental service under work order procedure amounted to \$4,121,795.79 for the following divisions of the City Government:

Schools	1,225,609.25
Health	106,747.83
Recreation	29,998.67
Library	27,000.21
Public Building Improvements	84,738.05
Gas Tax Accounts	159,711.99
Engineering	45,058.06
Sewage Plants	5,250.00
Public Utilities	443,673.28
General Office	97,735.00
Sewer Bonds	644,427.40
Street Bonds	617,684.56
Sewage Treatment Bonds	269,500.00
Public Welfare	10,107.20
Fire Department	37,162.75
Special Inspection	14,959.93
Juvenile Court Bonds	70,200.00
State Highway Cleaning	55,515.65
Miscellaneous	176,715.76

The Bureau was engaged in the fiscal processing of contracts under the Street, Sewer and School Bond programs, which operations are expected to continue into subsequent years. The City Hall Division was set up under a Head Clerk to meet the degree of responsibility centering on this important post.

In the supplying of materials for the varied activities of the department, a sub-storeroom and a material yard are conducted, through which there were 18,992 transactions handled involving the delivery of items to jobs, while outside purchases from vendors brought about the issuance of 4,912 requisitions and 6,110 delivery orders.

The Stores Revolving Fund under the control of the Bureau is designed to permit the purchase in advance of constantly-used materials. Plumbing supplies, electrical items, paints, hardware, lumber, glass, tools, sewer pipe, brick, cement, castings and miscellaneous needs which can be foreseen, are in Stores and charged out to the various branches of the work as used. Controls have been established which facilitate monthly reimbursements for goods withdrawn, and Stores records are maintained on a perpetual inventory basis subject to annual physical check.

The Department Cash Revolving Fund of \$1,500.00 is used by the Bureau for payment of small bills and transportation charges, and enables workmen on jobbing operations to make cash purchases at neighborhood stores, thus avoiding trips to downtown establishments. All transactions are conducted under controls set up by Ordinance.

Detailed records are maintained of all expenditures, particularly of operations performed under work order procedure. In these, the Charter requires that all elements of indirect and supervisory costs be considered and made part of the final job cost. To accomplish this, indirect labor is pro-rated monthly on an exact percentage basis, as are overhead charges for accident compensation, sick leave, vacation, retirement, equipment replacement and miscellaneous. These items of overhead are accumulated in reserves to meet the requirements designated. Charges for small tools and shop supplies used in work order operations are placed against the miscellaneous reserve.

The Bureau has a central office at the City Hall and a division handling operating accounts at the Corporation Yard, where the greater number of employees are assigned.

APPENDIX I

BUREAU OF ENGINEERING

CURRENT CONTRACT DATA - SUMMARY

Showing all Contract Work Awarded or Under Way
July 1, 1949 to June 30, 1950

Table	Type of Construction	No.	Contracts Awarded 1949-1950 Aggregate Value	Amount Expended During Fiscal Year 1949-1950
A	Major Thoroughfares	5	\$ 393,149.40	\$ 175,844.95
B-1	Streets - Private Contracts	35	352,954.00	461,940.00
B-2	Streets - Assessment Proceedings	26	177,199.26	256,703.43
B-3	Streets - Public Contracts, City Pay	15	127,999.08	126,553.65
B-4	Street Car Track Removal	8	2,040,342.98	1,555,505.05
C	Traffic Signals and Channelization	8	313,707.62	373,377.64
D-1	Sewers, Pipe, Vitrified Clay and Concrete	19	482,894.44	481,924.11
D-2	Sewers, Concrete (Monolithic)	4	1,557,196.65	1,787,558.47
E-1	Sewage Treatment Plants	5	8,055,967.68	6,174,615.88
E-2	Miscellaneous	14	5,662,895.19	1,402,412.39
TOTALS Awarded and Expended		139	\$19,164,306.30	\$12,796,435.57

TABLES

On the following pages appear separate tables of current contracts for each of the types of Construction listed above. The last column of each table, headed "Fund," denotes the source of the funds used to finance each project according to the following:

Abbreviation Legend

Designation	Description of Fund
General	General Fund City and County
Spec. Rd.	Special Road Improvement Fund
Major Sts.	Special Gas Tax Street Improvement Fund
State Hwy.	State Highway Fund
Assmt.	Assessed to property benefiting under the Street Improvement Ordinance of 1934
Pd. Prop. Owners	Costs borne by Property Owners under private contract.
1944 Sewer Bonds	Bond Issue voted by citizens on November 7, 1944 - \$12,000,000
1947 St. Imp. Bonds	Bond Issue voted by citizens on November 4, 1947 - \$22,850,000
1948 Sewage Tr. Bonds	Bond Issue voted by citizens on June 1, 1948 - \$15,000,000

Description & Contractor	CURRENT CONTRACT DATA			Contract Amount	Amount Expended 1949-1950	Fund
	Awarded	Completed Date	%			
A - MAJOR THOROUGHFARES						
Army St. bet. South Van Ness Ave. & Guerrero St. (Widening) (Grading, sewers, curbs, paving - signals) Lowrie Paving Co. Inc.	7/13/49	2/10/50	100%	\$157,594.95	\$157,594.95	St. Imp. Bond Spec. Rd. Major Sts. General P.U. Lighting
Judah St. Widening between 25th Ave. & 36th Ave. (Paving, curbs, sidewalk) Lowrie Paving Co. Inc.	4/12/50		13%	21,547.75	2,250.00	Spec. Rd.
Improvement of Woodside Ave. bet. Portola Drive & Idora Ave. Sec. "A" (Grading, paving, curb, sidewalks, etc.) Fay Improvement Co.	5/19/50		31%	51,950.70	16,000.00	St. Imp. Bond Major Sts.
Resurfacing						
Bush St. bet. Lyons and Franklin Dolores St. bet. Mkt. & 21st St. Fulton St. bet. Masonic and Franklin Howard St. bet. 8th and 9th Sts. Laguna Honda Blvd. bet. Dewey & Portola Dr. Pine St. bet. Lyons and Franklin South Van Ness bet. 14th and 26th Sts. 17th St. bet. Castro and Valencia Fay Improv. Co.	6/28/50		0	121,731.00		Major Sts. Spec. Rd.

CURRENT CONTRACT DATA						1949-1950	Fund
Description & Contractor	Awarded	Completed		Contract Amount	Amount Expended 1949-1950		
		Date	%				
A - MAJOR THOROUGHFARES (Cont'd)							
Alemamy Blvd.- Sta. 18+65 to Sta. 36+00(Paving, curbs, etc.) Lowrie Paving Co. Inc. 6/28/50		0	\$ 40,325.00	\$ 0		State Hwy.	
Totals awarded & expended during fiscal year			393,149.40	175,844.95			
B-1 - STREETS - Private Contracts							
Fairfax Ave. bet. 3rd & Phelps Sts.(Sewers, curbs, paving) Fay Improvement Co.	10/15/48	7/13/49	100%	6,200.00	1,860.00	Pd. Prop. Owners	
**University St. W½ from 460 S Felton St. to Wayland St.(Sewers, curbs, paving) Eaton & Smith	11/5/48	8/18/49	100%	9,100.00	6,370.00	"	
Silliman St. bet. Yale & Amherst Sts.(Sewers, curbs, paving) Fay Improvement Co.	11/12/48	6/16/49	100%	5,600.00	1,680.00	"	
*Goettingen St.:(portions) from Olmstead St. to 300 (N'y)(Sewers, curbs, paving) Fay Improvement Co.	12/3/48	7/14/49	100%	6,200.00	4,340.00	"	
*Quintara St.(S½) bet. 34th & 35th Aves.(Curbs, paving) Chas. L. Harhey Inc.	12/17/48	6/14/49	100%	2,500.00	1,750.00	"	
*Egbert St. (portions) bet. Kieth St. & Jennings St. (Sewers, curbs, paving) Fay Improvement Co.	12/24/48			9,700.00	6,790.00	"	

CURRENT CONTRACT DATA 1949-1950

Description & Contractor	Awarded	Date	%	Amount	Expended 1949-1950	Fund
B-1 - STREETS - Private Contracts (Cont'd)						
*Athens St. (portions) bet. Peru Ave. & Madison St. (Curbs, paving) Eaton & Smith	12/24/48	9/22/49	100%	\$ 11,500.00	\$ 6,900.00	Pd. Prop. Owners
Silliman St. (S½) bet. Princeton & 60 th E (Curbs, paving) Fay Improvement Co.	2/25/49	6/17/49	100%	675.00	293.00	"
Goettingen St. (portions) bet. Woolsey & Dwight Sts. (Grading, curbs, paving) Eaton & Smith	3/9/49	11/15/49	100%	6,700.00	4,020.00	"
Newhall St. (Portions) bet. Palou Ave. & Revere Ave. (Sewers, curbs & paving) Eaton & Smith	3/9/49	10/5/49	100%	9,200.00	4,600.00	"
Quintara St. bet. 33rd & 34th Aves. (Curbs, paving) C. L. Harney Inc.	3/9/49	8/4/49	100%	5,000.00	3,500.00	"
Avalon Ave. bet. Knox & Moscow St. - Moscow St. bet. Avalon & Excelsior Sts. Inc. Intersect. (Sewers, Curbs Paving) Fay Improvement Co.	3/9/49	5/5/49	100%	38,000.00	23,800.00	"
*Palou Ave. (portions) bet. Industrial St. & Selby St. (Sewers, curbs, paving) Fay Improvement Co.	4/20/49	8/25/49	100%	2,300.00	1,610.00	"
Crocker Amazon Tract Sub- division No. 2 (Streets with- in) (Sewers, Curbs, paving) C. L. Harney Inc.	4/20/49	12/2/49	100%	56,800.00	17,040.00	"

CURRENT CONTRACT DATA				1949-1950		Fund
Description & Contractor	Awarded Date	Completed Date	Contract %	Contract		
				Amount	Amount Expended 1949-1950	
B-1 - STREETS - Private Contracts (Cont'd)						
*Bemis St.(portions) bet. Castro & Roanoke Sts.(Curbs, paving) Bernal Construction Co.	5/13/49	10/3/49	100%	\$ 7,000.00	\$ 4,900.00	Pd. Prop. Owners
Gambier St. bet. Felton & Burrows Sts.(Sewers, curbs, paving) Fay Improvement Co.	5/27/49	12/5/49	100%	9,000.00	6,750.00	"
*Noriega St.(S½) bet. 60'W 48th Ave. & Great Hwy.(Curbs, paving) C. L. Harney Inc.	6/1/49	2/28/50	100%	1,900.00	1,900.00	"
Ina Court bet. La Grande Ave & Excelsior Ave. - La Grande Ave. bet. Ina Ct. & Avalon Ave. (Sewers, curbs, paving) Fay Improvement Co.	6/1/49	6/22/50	100%	21,000.00	21,000.00	"
Winston Dr.(Stonestown Plan 8242) 19th Ave.(Wily) Side bet. 20th & Winston Drive Stonestown Development Corp.	6/22/49		40%	20,000.00	8,000.00	"
Grocker Amazon Highlands Subdivision(Streets within) (Sewers, paving,curbs) Eaton & Smith	6/22/49		95%	60,000.00	57,000.00	"
*Farnum St.(portions) bet. Moffitt & Moreland Sts. Moffitt St.(portions) bet. Diamond & Castro Sts. (Sewers, curbs, paving) Fay Improvement Co.	7/22/49	4/20/50	100%	16,200.00	16,200.00	"

CURRENT CONTRACT DATA 1949-1950

Description & Contractor	Awarded Date	Completed Date	Completed %	Contract Amount	Amount Expended 1949-1950	Fund
B-1 - STREETS - Private Contracts (Cont'd)						
*Knox St. (portions) bet. Felton & Burrows Sts. (Curbs, paving) Fay Improvement Co.	7/22/49	3/3/50	100%	\$ 7,000.00	\$ 7,000.00	Pd. Prop. Owners
*Visitation Ave. (portions) bet. Bayshore Blvd. & 219 (E) (Curbs, paving) Fay Improvement Co.	7/22/49		0	2,235.00	0	"
*Wawona St. (portions) bet. 44th & 45th Aves. (Sewers, curbs, paving) C. L. Harney Inc.	7/22/49	10/27/49	100%	5,300.00	5,300.00	"
*Elmira St. (portions) from Helena St. (S) to Exist. Pavement (Sewers, curbs, paving) Fay Improvement Co.	8/10/49	6/28/50	100%	9,800.00	9,800.00	"
Colby St. bet. Silliman & Felton Sts. including Intersection of Felton St. (Sewers, curbs, paving) Fay Improvement Co.	8/12/49	2/23/50	100%	13,000.00	13,000.00	"
*Loomis St. (portions) bet. Oakdale Ave. & Industrial St. (Sewers, curbs, paving) C. L. Harney Inc.	9/16/49	2/23/50	100%	30,000.00	30,000.00	"
**Woolsey St. (S½) bet. University St. & Colby St. (Curbs, paving) Eaton & Smith	8/19/49		90%	5,250.00	4,725.00	"

CURRENT CONTRACT DATA						1949-1950
Description & Contractor	Awarded	Completed		Contract Amount	Amount Expended 1949-1950	Fund
		Date	%			
B-1 - STREETS - Private Contracts (Cont'd)						
Porter St. (W½) bet. 100' & 125' South Benton (Curbs, paving) John A. Jennings	8/19/49	9/6/49	100%	\$ 250.00	\$ 250.00	Pd. Prop. Owners
**Felton St. (N½) University St. to Colby St. (Curbs, paving) Fay Improvement Co.	9/7/49	2/23/50	100%	2,200.00	2,200.00	"
47th Ave. bet. Ulloa & Vicente Sts. (Sewers, curbs, paving) C. L. Harney Inc.	9/14/49	3/2/50	100%	15,600.00	15,600.00	"
*Excelsior Ave. (portions) bet. Moscow & Munich Sts. incl. Intersection of Excelsior Ave. & Ina Ct. (Sewers, curbs, paving) Fay Improvement Co.	9/30/49	6/15/50	100%	3,900.00	3,900.00	"
*Galvez Ave. (Portions) bet. 3rd and Phelps Sts. (Curbs, sewers, paving) C. L. Harney Inc.	9/30/49	11/18/49	100%	6,100.00	6,100.00	"
Bancroft Ave. bet. Kieth & Jennings Sts. (Curbs, paving) Fay Improvement Co.	9/7/49	5/29/50	100%	16,200.00	16,200.00	"
Waterville St. (E½) bet. 425' and 475' (N) Augusta (Curbs, paving) Fay Improvement Co.	10/11/49	12/27/49	100%	625.00	625.00	"
Peru Ave. bet. Valmer Terr. & Felton St. (Valmer Terr. bet. Peru & 302' S) (Sewers, curbs, paving) Fay Improvement Co.	11/23/49	6/13/50	100%	16,200.00	16,200.00	"

CURRENT CONTRACT DATA					1949-1950		Pd. Prop. Owners
Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1949-1950		
B-1 - STREETS - Private Contracts (Cont'd)							
Athens St. bet. Peru Ave. & Valmar Terr.-Valmar Terr. bet. Athens St. & 301 (S) Peru (Grading, sewers) Fay Improvement Co.	11/30/49		90%	\$ 3,000.00	\$ 2,700.00		
*Colby St. (portions) bet. Woolsey & Dwight Sts., -University St. (portions) bet. Woolsey & Dwight Sts. Dwight St. (portions) bet. University & Colby Sts. (Curbs, paving) Eaton & Smith	12/7/49		50%	21,300.00	10,650.00	"	
*Colby St. (portions) bet. Silver Ave. & Silliman St. (Curbs, paving) Fay Improvement Co.	12/9/49	3/8/50	100%	2,900.00	2,900.00	"	
Lakeshore Park Subdivision No. 4 Contract #1 (Streets within) (Sewers, curbs paving) C. L. Harney Inc.	12/9/49	2/28/50	100%	38,000.00	38,000.00	"	
*Bowdoin St. (portions) bet. Woolsey & Dwight Sts. (Sewers, Curbs, Paving) Fay Improvement Co.	1/6/50		90%	8,100.00	7,290.00	"	
Bowdoin St. bet. Dwight & Olmstead Sts. (Sewers, curbs, paving) Fay Improvement Co.	1/18/50		90%	12,300.00	11,070.00	"	

CURRENT CONTRACT DATA 1949-1950

Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1949-1950	Fund
B-1 - STREETS - Private Contracts (Cont'd)						
*Le land Ave. (portions) bet. Sawyer St. & its westerly termination (Sewers, curbs, paving) Fay Improvement Co.	2/1/50		10%	\$ 8,000.00	\$ 800.00	Pd. Prop Owners
**Conkling St. (portions) bet. Silver Ave. to its northerly termination (Curbs, paving) Fay Improvement Co.	2/21/50	6/29/50	100%	6,000.00	6,000.00	"
Kieth St. - at Egbert & Fitzgerald Aves. (Alterations to existing improvements) Fay Improvement Co.	2/21/50	6/8/50	100%	1,772.00	1,772.00	"
Palmetto Ave. - from Alemany Blvd. to 315 (W) of Capitol Ave. (Sewers, curbs, paving) Fay Improvement Co.	3/3/50		0	1,875.00	0	"
Lakeshore Park Subdivision No. 4 Contract No. 2 (Streets within) (Sewers, curbs, paving) C. L. Harney Inc.	3/15/50		80%	12,000.00	9,600.00	"
Myra Way - From Omar Way to La Bica Way (E Line) Reposa Way, from Myra Way (N) to existing pavement - La Bica Way (E/2) from Myra Way (N) to existing pavement (Sewers, curbs, paving) Eaton & Smith	3/15/50		40%	21,000.00	8,400.00	"
Elliot St. bet. Raymond & Leland Aves. (Sewers, curbs, paving) Eaton & Smith	3/22/50	6/30/50	100%	6,200.00	6,200.00	"

CURRENT CONTRACT DATA 1949-1950					Pd. Prop. Owners
Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1949-1950	
B-1 - STREETS - Private Contracts (Cont'd)					
Parkmead Subdivision (Streets within) (Additions & Alterations to Sewer System) Eaton & Smith	3 22/50	5 11/50	100%	\$ 25,000.00	\$ 25,000.00
Hamilton St.; (E ¹ / ₂) bet. Dwight St. and 175 ¹ / ₂ (N ¹ / ₂) (Grading) Fay Improvement Co.	4 12/50	0	1,000.00	0	"
Moscow St.; (W ¹ / ₂) bet. Excelsior Ave. & 22 ¹ / ₂ (S ¹ / ₂) (Curbs, paving) E. J. Treacy	5 10/50	5 22/50	100%	355.00	355.00
*Pennsylvania Ave.; (portions) bet. Mariposa & 18th St. (Curbs, paving) Fay Improvement Co.	5 10/50	0	7,200.00	0	"
Carver St.; bet. Mayflower St. C/L & 179, 92 ¹ / ₂ (S ¹ / ₂) including (S ¹ / ₂) of Crossing at Carver & Mayflower Sts. (Curbs, paving, sewers) Eaton & Smith	6 2/50	0	9,092.00	0	"
Massasoit St.; bet. Franconia St. & Rutledge St.; Rutledge St. bet. Peralta Ave. & Franconia St.; inc. Intersection of Massasoit & Rutledge Sts. (Sewers, curbs, paving) Eaton & Smith	6 21/50	0	18,000.00	0	"
Totals awarded and expended during fiscal year			\$352,954.00	\$461,940.00	
*Remaining portions of street improved under assessment proceedings.					
**Remainder improved under Public Contract - City Pay					

*Remaining portions of street improved under assessment proceedings.

**Remainder improved under Public Contract - City Pay

CURRENT CONTRACT DATA 1949-1950

Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1949-1950	Fund
B-2 - STREETS - Assessment Proceedings					
Silliman St. bet. Amherst & Princeton Sts. X-ings of Silliman St. with Amherst St. & Princeton St. (Sewers, curbs, paving) Fay Improvement Co.	11/12/48	6/17/49 100%	\$ 13,037.64 (4,000.00) -	\$ 6,623.64	Assmt. Spec. Rd.
Ogden Ave. bet. Ellsworth & Gates Sts. (Curbs, paving) Eaton & Smith	12/3/48	6/28/50 100%	3,350.00 (2,000.00) -	2,010.00	"
Masonic Ave. from Geary Blvd. Nly to Existing Pavement (Sewers, curbs, paving, lighting) C. L. Harney Inc.	11/10/48	10/19/49 100%	35,440.85 (11,080.00) -	707.85	Assmt. P.F. Co. Rd.
Goettingen St. (E $\frac{1}{2}$) bet. 200 & 300 Ft. North of Olmstead St. (Curbs, paving) Fay Improvement Co.	12/3/48	7/14/49 100%	1,381.00 (1,300.00) -	967.00	Assmt. Spec. Rd.
*Egbert Ave. bet. Kieth & Jennings Sts. (Curbs, paving) Fay Improvement Co.	12/17/48	80%	4,899.00 (1,200.00) -	3,819.00	"
University St. bet. Silliman St. & 460 (S) of Felton St. (Sewers, curbs, paving) Eaton & Smith	12/10/48	9/23/49 100%	22,553.85	15,787.85	Assmt.
*Athens St. bet. Peru Ave. & Madison Ave. (Curbs, paving) Eaton & Smith	12/24/48	9/22/49 100%	4,789.00 (3,050.00) -	2,873.00	Assmt. Spec. Rd.
Brussels St.; Crossing Ordway & Ward Sts. (Sewers, curbs, paving) C. L. Harney Inc.	11/5/48	7/19/49 100%	5,639.50 (1,700.00) -	1,127.50	"

CURRENT CONTRACT DATA 1949-1950

Description & Contractor	Awarded Date	Completed Date	Contract Amount	Amount Expended 1949-1950	Fund
B-2 - STREETS - Assessment Proceedings (Cont'd)					
Anza St. bet. Masonic & Parker Aves. Blake St. bet. Anza St. & Geary Blvd.(Widening)(Sewers, grading, paving) Eaton & Smith	3/2/49	9/13/49	100% \$ 110,774.25 { 88,450.00 - (26,500.00) -	\$64,232.25	Assmt. Sts. Major Sewer Bonds
Egbert Ave. bet. 3rd St. & Kieth St. Crossing of Egbert Ave. at Kieth & Jennings Sts.(Sewers, curbs, paving) C. L. Harney Inc.	1/21/49	10/31/49	100% 8,645.80 (1,200.00) -	6,051.80	Assmt. Rd. Spec.
Quintara St. bet. 26th & 28th Aves. - Intersection of Quintara St. & 28th Ave.(Sewers, curbs, paving) Fay Improvement Co.	3/9/49	10/19/49	100% 21,663.08 (6,000.00) -	10,832.08	Assmt. Rd. Spec.
Quintara St. & 34th Ave. Crossing (Curbs, paving) C. L. Harney Inc.	3/4/49	8/8/49	100% 3,568.50	2,141.50	Assmt.
*Goettingen St.(Portions) bet. Woolsey & Dwight Sts.(Curbs, paving) Eaton & Smith	3/9/49	11/15/49	100% 3,875.60 (2,200.00) -	2,325.60	Assmt. Rd. Spec.
*Newhall St.(Portions) bet. Quesada & Revere Ave.(Curbs, paving) Eaton & Smith	3/9/49	10/5/49	100% 4,600.00 (2,600.00) -	2,300.00	"
20th St. bet. DeHaro & Rhode Island Sts.(Sewers, curbs, paving) C. L. Harney Inc.	3/9/49	8/11/49	100% 8,167.00 (3,600.00) -	3,267.00	"
Orizaba Ave. bet. Sargent & Shields Sts. Intersections of Sargent, Montana, & Thrift Sts. (Sewers, curbs, paving) C. L. Harney Inc.	4/15/49	1/31/50	100% 23,814.10 (14,700.00) -	19,051.00	"

CURRENT CONTRACT DATA						1949-1950	Fund
Description & Contractor	Awarded	Date	Completed	Contract Amount	Amount Expended 1949-1950		
B-2 - STREETS - Assessment Proceedings (Cont'd)							
Palou Ave (NE½) bet. Industrial & Selby Sts. (Curbs, paving) Fay Improvement Co.	4/15/49	8/25/49	100%	\$ 1,493.10 (600.00) -	\$ 1,045.10	Assmt. Spec. Rd.	
Burrows St. bet. Gambier & Cambridge Sts. Incl. X-ings Gambier, Harvard, Oxford & Cambridge (Sewers) E. S. Treacy	5/6/49	9/12/49	100%	5,597.80 (100.00) -	3,918.80	"	
Bemis St. (Portions) Castro & Roanoke Sts. (Curbs, paving) Bernal Const. Co.	5/17/49	10/3/49	100%	3,187.50 (2,000.00) -	3,187.50	"	
*Noriega St. (S½) bet. 48th Ave. & 60th West (Curbs, paving) C. L. Harney	6/1/49	2/28/50	100%	765.00 -----	765.00	Assmt.	
Knox St. bet. Felton St. & Burrows St. (Curbs. paving) Fay Improvement Co.	7/22/49	3/3/50	100%	2,609.65 (800.00) -	2,609.65	Assmt. Spec. Rd.	
*Visitation Ave. (S½) Bayshore Blvd. & 87.4' (E) (Curbs Paving) Fay Improvement Co.	7/22/49		0	817.14	0	Assmt.	
Elmira St. bet. Helena & 250th (N) Incl. the Crossing of Elmira & Helena St. (Sewers, curbs paving) E. S. Treacy	7/22/49	11/28/50	100%	3,783.70 (300.00) -	3,783.70	Assmt. Spec. Rd.	
Wawona St. (N½) bet. 45th Ave... & 57.5' (E) (Curbs. paving) C. L. Harney Inc.	7/22/49	10/27/49	100%	844.70 (300.00) -	844.70	"	

Description & Contractor	CURRENT CONTRACT DATA			1949-1950		Fund
	Awarded	Completed Date	%	Contract Amount	Amount Expended 1949-1950	
B-2 - STREETS - Assessment Proceedings (Cont'd)						
Niawtic Ave. (NW½) bet. Panama St. & St. Charles Ave. (Curbs, paving) C. L. Harney Inc.	7/22/49	11/22/49	100%	\$ 5,626.75	\$ 5,626.75	Assmt.
*Farnum St. bet. Moffitt & Moreland Sts. Moffitt St. Portions bet. Diamond & Castro Sts. (Curbs, paving) Fay Improvement Co.	7/22/49	4/20/50	100%	(1,630.10 1,200.00)	1,630.10	Assmt. Spec. Rd.
*Elmira St. (Portions) bet. Helena & Augusta Sts. (Curbs, paving) Fay Improvement Co.	8/5/49	6/28/50	100%	(1,171.55 1,150.00)	1,171.55	"
*Loomis St. bet. Oakdale Ave. & Industrial St. Incl. Inter. Flower & Waterloo Sts. (Curbs, paving) C. L. Harney Inc.	8/17/49	2/23/50	100%	16,937.00	16,937.00	Assmt.
Phelps St. bet. Fairfax & Galvez Ave. Incl. Crossing of Phelps St. & Galvez Ave. (Sewer, curbs, paving) C. L. Harney Inc.	9/30/49	11/17/49	100%	8,726.28	8,726.28	Assmt. Spec. Rd.
*Excelsior Ave. (S½) bet. Munich St. & 100' (W) Incl. the Inter. at Munich St. (Sewers, curbs, paving) Fay Improvement Co.	9/30/49	6/15/50	100%	(2,684.00 500.00)	2,684.00	"
*Galvez Ave. (S½) bet. 3rd & 143.07' West (Curbs, paving) C. L. Harney Inc.	9/30/49	11/18/49	100%	(1,735.20 200.00)	1,735.20	"
Alpha St. (W½) bet. Wilde & Tioga Aves. Tioga Ave. from Alpha St. West to Existing Pavement (Grading, sewers, curbs, paving) Bernal Const. Co.	10/5/49	6/23/50	100%	12,043.80 (7,500.00)	12,043.80	"

CURRENT CONTRACT DATA 1949-1950

APPENDIX I

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Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1949-1950	Fund
B-2 - STREETS - Assessment Proceedings (Cont'd)					
*Colby St. (Portions) bet Woolsey & Dwight Sts. University St. (Portions) bet. Woolsey & Dwight Sts. Dwight St. (Portions) bet. University & Colby Sts. Crossings of University & Woolsey. Colby & Woolsey, Dwight & Colby (Sewers, curbs, paving) Eaton & Smith	12/7/49	50%	\$ 14,270.40 (9,600.00) -	\$ 7,135.00	Assmt. Spec. Rd.
*Colby St. (W½) bet. Silver Ave. & 59th St. (Curbs, paving) Fay Improvement Co.	12/9/49	100%	540.38	540.38	Assmt.
Quintara St. bet. 28th & 29th Aves. (Sewers, curbs, paving) Fay Improvement Co.	1/11/50	100%	13,640.40 (7,200.00) -	13,640.40	Assmt. Spec. Rd.
*Bowdoin St. (Portions) bet. Woolsey & Dwight Sts. (Curbs, paving) Fay Improvement Co.	1/6/50	90%	4,637.60 (900.00) -	4,174.00	"
*Leland Ave. bet. Sawyer St. & Western Termination (Curbs, paving) Fay Improvement Co.	1/27/50	10%	4,721.50 (400.00) -	472.00	"
Quintara St. bet. 30th & 31st Aves. (Sewers, curbs, paving) C. L. Harney Inc.	2/21/50	80%	8,730.00 (2,400.00) -	6,984.00	"
Madera St. bet. Wisconsin & Arkansas Sts. (Curbs, paving) Eaton & Smith	3/22/50	100%	4,914.00 (3,300.00) -	4,914.00	"
Summit St. bet. Thrift St. & Margaret Ave. Intersection at Summit St. with Montana St. Joseph Ave. Margaret Ave. (Sewers, curbs, paving) Eaton & Smith	3/22/50	40%	16,926.25 (7,000.00) -	6,770.00	

CURRENT CONTRACT DATA 1949-1950

Description & Contractor	Awarded Date	Completed %	Contract Amount	Amount Expended 1949-1950	Fund
B-2 - STREETS - Assessment Proceedings (Cont'd)					
Ireland Ave. - Intersection of Hahn St. & Sawyer St. (Sewers, curbs, paving) Fay Improvement Co.	4/19/50	10%	\$ 4,406.15 (1,300.00) -	\$ 440.00	Assmt. Rd. Spec.
22nd St. bet. Dellaro & Carolina Sts. (Curbs, paving) Fay Improvement Co.	4/19/50	0	4,387.25 (3,700.00) -	0	"
Ina Court(E½) bet. 225' & 300' (N) from Excelsior Ave. (Sewers, curbs, paving) Fay Improvement Co.	4/19/50	100%	807.45	807.45	Assmt.
25th St. bet. Texas St. & Pennsylvania Ave. Incl. the intersection of Mississippi & X-ing Pennsylvania (Sewers, curbs, paving) Bernal Const. Co.	5/31/50	0	13,381.80 (1,500.00) -	0	Assmt. Rd. Spec.
*Pennsylvania Ave. bet. Mariposa & 18th St. (Curbs, paving) Fay Improvement Co.	5/10/50	0	3,103.00	0	Assmt.
Jules Ave. bet. Grafton & Lakeview Aves. (Sewers, curbs, paving) Bernal Const. Co.	5/31/50	0	21,967.25 (16,500.00) -	0	Assmt. Rd. Spec.
Rowdoin St. Crossing Dwight St. (Sewers, curbs, paving) Fay Improvement Co.	6/21/50	0	4,765.61 (2,100.00) -	0	"
Totals awarded and expended during fiscal year			\$177,199.26	\$256,703.43	

*Remaining portions of street improved under private contract

(-) Amount paid by City - Balance paid by Property Owners.

CURRENT CONTRACT DATA 1949-1950

Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1949-1950	Fund
B-3 - STREETS - Public Contracts - City Pay						
Kieth St. bet. Armstrong & Carroll Aves. (Construction Sidewalk) Love & Haun	7/22/49	8/24/49	100%	\$ 1,101.12	\$ 1,101.12	Spec. Rd.
*University St. (E½) bet. 460' (S) Felton St. & Wayland St. (Curbs, paving) Eaton & Smith	11/5/48	8/18/49	100%	9,557.20	6,677.20	"
34th Ave. (W½) bet. Pacheco & Quintara Sts. Quintara St. (N½) bet. 34th & 35th Aves. (Curbs, paving) C. L. Harney Inc.	12/17/48	6/14/49	100%	11,438.75	5,718.75	"
Albion St. bet. 15th & 16th Sts. (Widening & Reconstruction) C. L. Harney Inc.	8/10/49	9/16/49	100%	7,665.36	7,665.36	"
10th Ave. bet. Ortega & Quintara Sts. Quintara St. bet. 10th & 12th Aves. (Resurfacing) C. L. Harney Inc.	8/19/49	10/4/49	100%	8,299.25	8,299.25	"
*University St. bet. Wayland St. & Woolsey St. C. L. Woolsey St. (N½) bet. University St. & Colby (E-Line) (Curbs & Paving) Eaton & Smith	8/19/49	1/12/50	100%	10,334.79	10,334.79	P. U. Water Spec. Rd.
*Felton St. (S½) bet. University & Colby Sts. (Curbs, paving) Fay Improvement Co.	9/2/49	2/23/50	100%	3,032.05	3,032.05	Spec. Rd.
Divisadero St. bet. Broadway & Vallejo Sts. (Replace brick center) C. L. Harney Inc.	9/30/49	10/31/49	100%	3,398.75	3,398.75	"

Description & Contractor	CURRENT CONTRACT DATA			1949-1950		Fund
	Awarded	Completed	Date	Contract Amount	Amount Expended 1949-1950	
B-3 - STREETS - Public Contracts - City Pay (Cont'd)						
17th Ave. bet Lincoln Way & Wawona St.(Resurfacing) Lowrie Paving Co. Inc.	10/14/49	100%	1/5/50	\$ 29,885.43	\$ 29,885.43	Spec. Rd.
Market St. bet. Collingwood & 18th Sts.(Resurfacing) Lowrie Paving Co. Inc.	11/18/49	100%	2/16/50	10,225.40	10,225.40	Major Sts.
Sanja Rosa bet. Circular Ave. & Oloran Alley(Widening) Eaton & Smith	2/1/50	100%	5/8/50	6,782.00	6,782.00	Spec. Rd.
25th Ave. bet Fulton St. & El Camino bet Mar(Resurfacing) C. L. Harney Inc.	2/21/50	100%	3/31/50	16,492.80	16,492.80	Major Sts.
*Conkling St.(E½) bet. 121.75' & 321.75'(N) Silver Ave.(Curbs, paving) Fay Improvement Co.	2/21/50	100%	6/29/50	2,292.25	2,292.25	S. F. Unified School District
Masonic Ave. bet. Fell & Anza Sts.(Resurfacing) Lowrie Paving Co. Inc.	3/29/50	100%	6/9/50	11,914.10	11,914.10	Major Sts.
Fell St. bet. Baker & Franklin Sts.(Resurfacing) Lowrie Paving Co. Inc.	4/5/50	0		14,272.50	0	"
Carolina St.(E½) bet. 17th St. & Mariposa St.(Sidewalk) M. J. & H. T. Treacy	3/31/50	100%	5/17/50	1,583.40	1,583.40	Spec. Rd.
*La Bica Way(W½) bet. Myra Way(S.L.) & 140'(N½)(Curbs, paving) Eaton & Smith	4/12/50	50%		1,339.00	669.00	"
Phelps St. bet. Galvez & Terold Sts.(Asphalt Surface Treatment)Fay Improvement Co.	6/16/50	100%	7/10/50	482.00	482.00	"
Totals awarded and expended during fiscal year				\$127,999.08	\$126,553.65	
*Remaining portions of street improved under private contract.						

*Remaining portions of street improved under private contract.

CURRENT CONTRACT DATA 1949-1950						
Description & Contractor	Awarded	Completed Date	% Amount	Contract Amount	Amount Expended 1949-1950	Fund
B-4 - STREET CAR TRACK REMOVAL						
The Embarcadero bet. Ferry Bldg. & Jackson St. Washington St. bet. the Embarcadero & Kearny St. - Jackson St. bet. the Embarcadero & Drumm St. - Jackson St. bet. Battery St. & Columbus Ave. - Columbus Ave. bet. Montgomery St. & Stockton St. (Removal of tracks & reconstruction of pavement) Lowrie Paving Co. Inc.	2/11/49	7/29/49	100%	\$ 105,716.95	\$ 16,336.95	1947 St. Imp. Bonds Spec. Rd.
18th St. bet. Castro St. & Mkt. St. Mkt. St. bet. 18th & Clayton Sts. (Removal of tracks & reconstruction of pavement) Fay Improvement Co.	4/20/49	7/12/49	100%	60,847.92	4,847.92	1947 St. Imp. Bonds
3rd St. bet. Channel & Mariposa Sts. (Removal of tracks & reconstruction of pavement) C. L. Harney Inc.	6/24/49	8/9/49	100%	67,992.20	60,492.20	"
Mission St. bet. the Embarcadero & Excelsior Ave. (Removal of tracks & reconstruction of pavement) Eaton & Smith	7/13/49	12/2/49	100%	776,373.65	776,373.65	Spec. Rd. 1947 St. Imp. Bonds General P. U. - Mun. Ry.
San Bruno Ave. bet. Alemany Blvd. & Arletta Ave. (Removal of tracks & reconstruction of pavement) Fay Improvement Co.	9/2/49	3/29/50	100%	187,338.59	187,338.59	1947 St. Imp. Bonds P. U. - Mun. Ry.

CURRENT CONTRACT DATA 1949-1950

Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1949-1950	Fund
B-4 - STREET CAR TRACK REMOVAL (Cont'd)						
6th Ave., bet. Fulton & Lake Sts., California St. bet. Presidio Ave., & 6th Ave., Presidio Ave. bet. Geary Blvd. & California St., Lake St. bet. Arguello Blvd. & 6th Ave., Sutter St. bet. Fillmore St. & Presidio Ave. (Removal of pave- ment) Eaton & Smith	11/4/49	4/14/50	100%	\$ 273,560.74	\$ 273,560.74	1947 St. Imp. Bonds
Bryant St. bet. 11th St. & Army St. (Removal of tracks & recon- struction of pavement) C. L. Harney Inc.	1/4/50		90%	204,886.20	154,870.00	"
San Jose Ave. from Diamond St. to Ocean Ave. (Removal of tracks & reconstruction of pavement) Lowrie Paving Co. Inc.	3/22/50		65%	90,681.50	60,010.00	"
Sutter St. bet. Market St. & Fillmore St. (Removal of tracks & reconstruction of pavement) C. L. Harney Inc.	5/5/50		16%	158,584.80	21,675.00	"
Lincoln Way bet. Arguello Blvd. & 48th Ave. Sunset Blvd. Lincoln Way Interchange (Removal of tracks & reconstruction of pavement) Eaton & Smith	6/21/50		0	340,711.10	0	"
Divisadero St. bet. Geary & Sutter Sts. (Removal of tracks & reconstruction of pavement) Lowrie Paving Co. Inc.	6/30/50		0	8,206.40	0	1947 St. Imp. Bonds Spec. Rd.
Totals awarded and expended during fiscal year				\$2,040,342.98	\$1,555,505.05	

CURRENT CONTRACT DATA					1949-1950	Fund
Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1949-1950	
C - TRAFFIC SIGNALS & CHANNELIZATION						
Bush St. from Market St. to Presidio Ave. (Installation of traffic signal systems) R. Flatland	1/28/49	10/13/49	100%	\$ 77,672.15	\$ 45,872.15	Major Sts.
Pine St. bet. Market St. & Presidio Ave. (Installation of traffic signal system) H. C. Reid & Co.	3/30/49	1/26/50	100%	83,354.23	67,174.23	1947 St. Imp. Bonds
Market St. at Eureka & Diamond Sts. (Center Islands traffic lights & signals) Abbett Electric Corp.	6/29/49	8/29/49	100%	11,156.00	11,156.00	"
Geary Blvd. at Masonic Ave. & Presidio Ave. (Traffic signals & construction of islands) R. Flatland	6/15/49	7/12/49	100%	1,090.00	1,090.00	Spec. Rd.
Alemaney Blvd. bet. Mission St. & San Jose Ave. (Channelization & traffic signals) R. Flatland	7/15/49	1/26/50	100%	121,099.26	121,099.26	1947 St. Imp. Bonds State Hwy. Spec. Rd.
Monterey Blvd. & Forester St. Larkin St. & California St. (Installation of traffic sig- nals) Abbott Electric Corp.	11/16/49	4/12/50	100%	5,334.00	5,334.00	Spec. Rd.
Market St. bet. Castro St. & 10th St. (Installation of a traffic signal system) R. Flatland	11/30/49		99%	97,453.96	75,040.00	1947 St. Imp. Bonds

CURRENT CONTRACT DATA				1949-1950		Fund
Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1949-1950	
C - TRAFFIC SIGNALS & CHANNELIZATION (Cont'd)						
Mission St. & Geneva Ave., Naples St. & Geneva Ave., Stanyan St. & Fulton St. (Isolated crossings installation of traffic signals Contract No. 1) R. Flatland	12/7/49	5/26/50	100%	\$ 28,867.00	\$ 28,867.00	1947 St. Imp. Bonds Spec. Rd.
Market St. bet. 11th St. & Noe St. (Removal & construction of islands) Love & Haun	12/2/49	1/31/50	100%	3,870.00	3,870.00	Spec. Rd.
Ocean Ave. & Victoria, Ocean Ave. & Miramar Ave. (Isolated crossings Contract No. 2 - Installation of traffic signals) H. C. Reid & Co.	2/15/50	4/20/50	100%	10,050.00	10,050.00	"
Bush St. & Pine St. bet. Market St. & Presidio Ave. (Supplementary traffic signals) Abbott Electric Corp.	3/29/50		36%	14,297.00	3,825.00	1947 St. Imp. Bonds
San Jose Ave. & Bernal Ave. at Randall St. & others (Channelization) C. L. Harney Inc.	5/31/50		0	32,736.40	0	Major Sts. Spec. Rd.
Totals awarded and expended during fiscal year				\$313,707.62	\$373,377.64	

CURRENT CONTRACT DATA 1949-1950

Description & Contractor	Awarded	Completed Date	Contract Amount	Amount Expended 1949-1950	Fund
D-1 - SEWERS - PIPE - Vitrified & Concrete					
Scott St. Sewer System Sec. "E" in Waller, Page, Scott & Fell Sts. bet. Steiner & Divisadero (Concrete, pipe, sewer) M. J. Lynch	5/28/48	8/25/49	100% \$ 287,633.62	\$ 23,063.62	1947 St. Imp. Bonds 1944 Sewer Bonds
Lake St. Sewer System Sec. "B" bet. 17th & 8th Aves. (Concrete, pipe, sewer) C. L. Harney Inc.	3/23/49	12/23/49	100%	248,718.53	1944 Sewer Bonds
Dolores St. bet. Army St. & 27th St. (Sewer) Bros. Const. Co.	4/15/49	7/17/49	100%	280.81	General
9th Ave. bet. Forest Hill Tract & 12th Ave. (Sewer) Central Calif. Const. Co.	6/3/49	11/23/49	100%	4,000.00	Pd. Prop. Owners
Ogden Ave. bet. Ellsworth & Gates Aves. (Tile drains) Bernal Construction Co.	7/1/49	9/8/49	100%	699.00	General
Stanley St. Sanitary Sewer in Parkmerced at Font Blvd. (Alterations) M. J. Lynch	7/15/49	9/22/49	100%	645.00	1944 Sewer Bonds
23rd St. & Pennsylvania Ave. (Sewer) Pac. Gas & Elect. Co.	7/15/49	8/2/50	100%	500.00	Pd. Prop. Owners
Fell & Fillmore Sts. (Culvert & Manhole) Lowrie Paving Co.	7/20/49	8/1/49	100%	500.00	"
Lake St. Sewer System Sec. "A" Contract No. 2 (Extend existing sewer 250') M. J. Lynch	9/23/49	1/6/50	100%	23,573.16	1944 Sewer Bonds

CURRENT CONTRACT DATA 1949-1950

Description & Contractor	Awarded	Completed Date	%	Contract Amount	Amount Expended 1949-1950	Fund
D-1 - SEWERS - PIPE - Vitrified & Concrete (Cont'd)						
Geneva Ave., Santos St. Easterly (Sewer) M. J. Lynch	9/23/49	11/14/49	100%	\$ 900.00	\$ 900.00	Pd. Prop. Owners
Harrison St. (E½) bet. 13th & 14th Sts. (Catchbasins, culvert) Fay Improvement Co.	9/30/49	10/6/49	100%	200.00	200.00	"
Moffitt St. bet Farnum St. & Diamond (Sewer replacement) Fay Improvement Co.	10/21/49	10/28/49	100%	1,155.00	1,155.00	General
Phelan Ave. bet. Judson & Harold Aves. (Sewer) M. J. Lynch	11/9/49	4/6/50	100%	43,617.03	43,617.03	1944 Sewer Bonds
24th St. bet Michigan St. & Louisiana St. (Sewer) Eaton & Smith	11/16/49	4/15/50	100%	17,000.00	17,000.00	Pd. Prop. Owners
Presidio Ave. & Post St. (Sewer, storm water drain) Empire Const. Co.	11/30/49	2/10/50	100%	5,000.00	5,000.00	"
Lake St. Sewer Sec. "A" Contract No. 3 (24" Drain Division of Lobos Creek into Lake St. Sewer) M. J. Lynch	12/9/49	1/6/50	100%	2,454.00	2,454.00	1944 Sewer Bonds
24th St. bet. Georgia St. & Louisiana St. (Sewer) Eaton & Smith	12/14/49	4/5/50	100%	3,003.00	3,003.00	General
El Camino Del Mar (In Lincoln Park) (Storm water drainage system) Martin Murphy	2/21/50	6/9/50	100%	2,398.00	2,398.00	"

Description & Contractor	Awarded	Date	%	Amount	Expended 1949-1950.	Fund
D-1 - SEWERS - PIPE - Vitrified & Concrete (Cont'd)						
North Point St. West of Taylor (Catchbasin, culvert) Love & Haun	3/3/50	4/7/50	100%	\$ 450.00	\$ 450.00	Pd. Prop. Owners
Egbert Ave. bet. Jennings St. (E Line) & 364 th W. (Sewer) Lowrie Paving Co. Inc.	3/22/50	4/28/50	100%	2,361.96	2,361.96	General
Lake St. Sewer System Sec. "C" Contract No.1 (Construction concrete pipe sewer) M & K Corporation	3/22/50		32%	372,891.00	100,725.00	1944 Sewer Bonds
Cragmont Ave. (N) Quintara St. (Reconstruct Sewer in Easment) M. Desiano	4/26/50	6/19/50	100%	500.00	500.00	Pd. Prop. Owners
18th Ave. North of Vicente St. (Sewer replacement) Fay Improvement Co.	5/31/50		0	5,047.29	0	General
Totals awarded and expended during fiscal year				\$482,894.44	\$481,924.11	
D-2 - SEWERS - CONCRETE (Monolithic)						
Lake Merced Sewer System Sec. "D" (Tunnel Construction) Joint Venturers - M & K Corp., Piombo Const. Co., Fredrickson- Watson Const. Co.	8/25/48	2/28/50	100%	1,305,541.31	453,541.31	1944 Sewer Bonds
Lake Merced Sewer System Sec. "C" (Construction of Lake Crossing) Joint Venturers - Fredrickson- Watson, M & K Corp., Piombo Const. Co.	3/9/49	4/5/50	100%	915,509.01	732,209.01	"

CURRENT CONTRACT DATA 1949-1950

Description & Contractor	Awarded	Date	Completed %	Contract		Fund
				Amount	Amount Expended 1949-1950	
D-2 - SEWERS - CONCRETE (Monolithic) (Cont'd)						
3rd St. South of Islais St. (Sewer Diversion Structure & Appurtenances) Rademann & Giusto	7/29/49	12/24/49	100%	\$ 29,248.15	\$ 29,248.15	1944 Sewer Bonds
Lake Merced Sewer System Seq. "B" (Construction of Tunnel) Joint Venturers - Fredrickson-Watson Const., M & K Corp., Piombo Const. Co.	11/23/49		41%	1,381,530.00	568,735.00	"
Jackson St. bet. Drumm & Battery Sts. (Sewer reconstruction & track removal) C. L. Harney Inc.	4/12/50		0	121,177.70	0	"
7th St. Sewer Extension at Channel St. (Construction of sewer) M. J. Lynch	5/17/50		15%	25,240.80	3,825.00	"
Totals awarded and expended during fiscal year				\$1,557,196.65	\$1,787,558.47	
E-1 - SEWAGE TREATMENT PLANTS						
North Point Sewage Treatment Plant in the vicinity Bay St. at Grant Ave. (Construction) Joint Venturers - M & K Corp., F. J. Early Jr. Co., Stolte Inc., Haas & Rothschild	11/28/48		63%	8,289,525.00	3,734,700.00	"
North Point Sludge Treatment Plant near Islais Creek (Con- struction) Joint Venturers - MacDonald, Young & Nelson, Morrison-Knudsen Co. Inc.	8/26/49		37%	4,486,000.00	1,435,650.00	1948 Sewage Tr. Bonds

CURRENT CONTRACT DATA 1949-1950					Fund
Description & Contractor	Awarded	Completed Date	Contract Amount	Amount Expended 1949-1950	
E-1 - SEWAGE TREATMENT PLANTS (Cont'd)					
North Point Sludge Force Main (Construction) C. L. Harney Inc.	9/16/49		89% \$ 388,180.80	\$ 301,750.00	1948 Sewage Tr. Bonds
North Point Sewage Treatment Plant-Influent & Effluent Sewers (Construction) C. L. Harney Inc.	10/26/49		30% 1,039,903.00	292,400.00	"
Richmond Sunset Sewage Tr. Plant Enlargement Contract No.2- Screening incinerator) Schumate & Schilling	11/16/49	4/12/50	100%	9,765.88	1944 Sewer Bonds
Southeast Sewage Tr. Plant near Islais Creek(Construction) Joint Ventures - Walsh Const. Co., Bates & Rogers Const. Corp., J. H. Pomeroy	1/18/50		22% 2,132,118.00	400,350.00	1948 Sewage Tr. Bonds
Totals awarded and expended during fiscal year			\$8,055,967.68	\$6,174,615.88	
E-2 - MISCELLANEOUS					
Islais Creek Bridge at 3rd St. (Construction of Double Leaf Bascule Bridge) Duncanson & Harrelson	11/17/48	4/1/50	100%	1,256,229.35	Major Sts.
48th Ave. & Fulton St.(Sewage Pump Station-sewer & appurten- ances) Rademann & Giusto	6/22/49	4/14/50	100%	92,816.39	1944 Sewer Bonds
Clement St. & Arguello Blvd; (Removal & reinstallation of Parking Meters) R. Flatland	7/29/49	9/8/49	100%	237.50	General

Description & Contractor	CURRENT CONTRACT DATA			1949-1950		Fund
	Awarded	Completed Date	%	Contract Amount	Amount Expended 1949-1950	
E-2 - MISCELLANEOUS (Cont'd)						
Bernal Heights (Leveling off Observation Area) C. L. Harney Inc.	8/10/49		0	\$.0001	\$ 0	Spec. Rd.
Junipero Serra Blvd. at Alemany (Construction of a Viaduct) Granite Const. Co.	9/16/49		95%	288,888.00	250,325.00	State Hwy.
Street Signs S.W. Section of City (5th Contract) (Erection) M. J. Lynch	10/11/49	3/28/50	100%	22,707.50	22,707.50	Spec. Rd.
Anzavista Subdivision - Arbol Lane & Sonora Lane (Stairways) U. Peira & Sons	10/28/49	11/9/49	100%	2,500.00	2,500.00	Pd. Prop. Owners
Anza St. bet. Blake St. & Parker Ave. (Slope protection) Justice Dunn Co.	1/6/50	2/20/50	100%	1,587.00	1,587.00	Major Sts.
Broadway Tunnel (Construction) Morrison-Knudsen Co. Inc.	2/8/50		4%	5,253,552.35	151,130.00	1947 St. Imp. Bonds
Street Name Plates & Block Number Plates (Purchase of) Contract No. 6	2/ /50		100%	13,066.58	12,932.65	Spec. Rd.
Marina Sewage Pumping Station (Fabrication & installation of trap doors & railings) Star Iron Works	4/19/50		0	736.00	0	General
Lake St. Sewer Sec. "A" in Presidio Military Reservation (Test Borings) J. N. Pitcher Co.	5/3/50	5/18/50	100%	515.00	515.00	1944 Sewer Bonds

CURRENT CONTRACT DATA 1949-1950

Description & Contractor	Awarded Date	Completed		Contract Amount	Amount Expended 1949-1950	Fund
		Date	%			
E-2 - MISCELLANEOUS (Cont'd)						
Street Signs(New Type) Contract No.6(Installation) Murlark Co.	5/5/50	0	\$	17,869.26	0	Spec. Rd.
Laguna Honda Home(Steel Water Storage Tank & Appurtenances) Calif. Steel Products Co.	5/5/50	0		19,485.00	0	General
Log Cabin Ranch Sewage Treatment Plant(Construction) M. J. Lynch	6/23/50	0		39,810.00	0	"
Richmond Sunset Sewage Treatment Plant(Repainting, Ventilating, Duct Work) Plasticcoat Co.	6/28/50	0		1,941.00	0	"
Totals awarded and expended during fiscal year				\$5,662,895.19	\$1,402,412.39	

BUREAU OF ARCHITECTURE

REPORT OF ACTIVITIES

Showing all work completed, contracts under construction and work in progress, and work under preparation - July 1, 1949 to June 30, 1950.

WORK COMPLETED

Board of Education

General Construction

City College of San Francisco (Paint Technology Laboratory)	\$ 43,777.75
Francis Scott Key Elementary (Addition)	68,137.88
Lawton School (Addition)	256,931.00

Miscellaneous Alterations

Francisco Junior High School (Interior Machine Shop)	5,710.50
Galileo High School (Shop)	10,947.00
James Lick Jr. & Lowell High (Interior)	5,259.00
Redding Elementary School (Wire Glass & Exterior Sash)	2,294.00
Polytechnic High School (Boiler Room Enclosure)	6,439.45
Commodore Sloat, Jefferson & Webster (Storage Rooms)	5,710.00
Cooper, Laguna Honda & Golden Gate (Interior)	13,591.00
Grant Elementary School (Yard Repair)	17,199.64
George Washington High School (Installation Smoke Pocket Extensions & Dashpot Guard)	818.00
Roosevelt Junior High School (Auditorium Stage Sprinkler)	997.00

Temporary Portable Prefabricated Schools

Double Rock Elementary School (General Construction)	\$ 97,182.00
Hillcrest Elementary School (Relocating Three Units)	4,832.00
Lakeside Elementary School (General Construction)	78,725.00
Lake Merced Elementary School (General Construction)	76,600.00
Ridgepoint Elementary School (General Construction)	158,874.00

Interior Painting

Mission High School (School Shop)	4,273.00
Polytechnic High School (Miscellaneous)	9,905.00

New Exits and Fire Escapes

Girls' High School	
Grattan Elementary School	
Hancock Elementary School	
Marshall Elementary School	37,653.00
McKinley Elementary School	
George Peabody Elementary	
Sherman Elementary School	
Presidio Junior High School	
Emerson Elementary School	9,748.00
Raphael Weill Elementary	
Farragut Elementary School	
Bryant Elementary School	

Asbestos Curtains

Balboa High School	
Mission High School	20,400.00
Washington High School	
Girls' High School	

Roof Repairs

Alamo Elementary School	11,961.20
Dudley Stone Elementary School	6,031.00
Grant Elementary School	4,783.00
High School of Commerce	10,951.00
Hawthorne Elementary School	6,481.00
Lawton School (Frame Classrooms)	1,532.00
Polytechnic High School (Drains)	889.00

Boring of Test Holes

Candlestick Cove Elementary	\$ 332.20
Fremont Elementary School	927.50
Noriega Home School	487.50
Ocean View Heights Home School	393.19
Santiago Home School	500.00
Silver Avenue Elementary School	828.10
Sunnydale Elementary School	1,730.10
Sunset "A" Elementary School	1,046.15
Ulloa Elementary School	450.00
	\$985,327.16

Department of Public Health

San Francisco Hospital

Sidewalk Entrance to Psychopathic Cancer Building	\$ 2,143.00
Interior Painting of Laundry Bldg.	2,387.00

Central Emergency Hospital

Interior Alterations	14,046.70
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Laguna Honda Home

Gas Oil Burner Equipment	6,528.00
Repairs to Roof Decks	7,572.00
Roofing	19,485.00

Hassler Health Home

Interior Painting of Wards 5A, 5B, 6A, and 6B	9,217.00
Porch Deck Covering	5,330.00
Interior Miscellaneous Painting	648.00
Redwood Water Tank Repairs	987.00
	\$ 68,343.70

Fire Department

General Construction

Engine Company No. 27	\$222,333.22
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Painting Interior and Exterior

Engine Company No. 40	2,147.00
Engine Company No. 43	1,842.00
Engine Company No. 7	1,677.00
Engine Company No. 44	1,885.00

Miscellaneous Alterations

Engine Company Nos. 40 & 43	\$ 4,186.00
Engine Company No. 44	348.50
Engine Company No. 3	2,197.00
Pumping Station No. 2	4,286.00
	\$240,901.72

Park Commission

M. H. DeYoung Memorial Museum

Exterior Treatment	\$191,136.23
Lecture Hall, Library, and Office	49,390.00

California Palace of the Legion of Honor

Alterations	9,023.60
Alterations	1,953.00
	\$251,502.83

City Hall

Central Permit Bureau

Alterations	\$ 51,159.04
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Civil Service Office

Alterations	21,974.10
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Supervisors' Chambers

Refinishing	3,900.00
Cork Tile Flooring	1,583.72
Stair Carpet	166.56
Lighting Fixtures	3,325.00
Draperies & Venetian Blinds	2,104.08
Cabinet Work	6,318.08
Public Address System (Additions)	641.00
Public Address System (Alterations)	3,400.55
Renovating Chairs & Benches	5,385.00
Water Cabinet & Conference Table	687.00
	\$100,644.13

APPENDIX II

Civic Center

Civic Auditorium	
New Walkway over Organ Loft	\$ 1,925.00
Recreation Department Alterations	10,929.10
Parking Authority	
Office Layout	6,150.00
	\$ 19,004.10
Total Work Completed	\$1,665,723.64

CONTRACTS UNDER CONSTRUCTION

Board of Education

1948 School Bond Issue	
Hillcrest Elementary School	\$ 653,626.00
John A. O'Connell Vocational & Technical Institute	1,551,464.00
Noriega Home School Unit	261,539.00
Santiago Home School Unit	232,176.00
Sunset Reservoir Home School Unit	219,752.00
Ulloa Elementary School	909,767.00
School Bond Modernization Program	
Commerce, Mission, & Washington (Cafeteria Acoustical Work)	7,334.00
Argonne, Columbus, Guadalupe, Commodore Sloat, Jefferson & Paul Revere (Reconversion Heating Plants)	32,983.00
William McKinley Elementary (General Alterations)	26,987.00
James Denman Junior High School (Additions to Locker Rooms)	23,194.00
Cleveland Elementary School (Repaving Yard)	4,120.00
Jefferson Elementary School (Repaving Yard)	3,542.00
Boring Test Holes	
Abraham Lincoln High School	3,739.00
Patrick Henry Elementary	1,000.00

Temporary Portable Prefabricated Schools

Abraham Lincoln High School	\$ 5,664.00
(Relocating Three Units)	
	\$3,936,887.00

Department of Public Health

San Francisco Hospital

Chemical Laboratory, Pathological Bldg.	\$ 16,377.00
(Miscellaneous Alterations)	
Nurses' Home Repairs	20,193.00
Isolation Wing Repairs	29,577.00
Service Feeder, Alterations, and new Steam Turbine Generating Units	104,444.00

Laguna Honda Home

Acoustical Tile in some corridors	2,389.00
Interior Miscellaneous Painting	10,230.00
Interior Miscellaneous Painting	6,713.00
Repairs on Elevators	1,385.00
Relining of Boilers	4,026.00

Health Centers

Alemany Health Center	5,888.00
(Misc. Repairs & Painting)	
Marina-North Beach	7,869.00
(General Construction)	
	\$209,091.00

Fire Department

Miscellaneous Alterations

Fire Department Garage	\$ 7,277.00
(Basement of City Hall)	
Engine No. 27	1,925.00
(New Additional Lockers)	
Jones Street Tank	6,577.00
(New Copper Cornice)	
	\$ 15,779.00

Police Department

General Construction

Mission Police Station	\$142,800.00
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APPENDIX II

City Hall

Miscellaneous

Controller's Office	\$ 2,680.00
City Hall Exterior Cleaning	33,785.00
Law Library Storage Space	25,577.00
Jury Room Alterations	15,297.00
Reproduction Bureau Alter.	13,225.00
Supervisors' Table Repairing	350.00
	\$ 90,914.00

Park Commission

M. H. DeYoung Memorial Museum

Bronze Lettering	\$ 1,230.00
Carpenter Shop Additions	16,437.00
	\$ 17,667.00

Department of Public Works

General Construction

Maintenance Yard	\$ 515,402.00
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Juvenile Court

General Construction

Youth Guidance Center Phase I & II	\$2,958,833.00
Youth Guidance Center Phase III	823,705.00
	\$3,782,538.00

Total Contracts Under Construction	\$8,711,078.00
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WORK UNDER PREPARATION

Board of Education

1948 School Bond Issue

Sunnydale Elementary School (Spencer & Ambrose)	\$ 835,742.00
Miraloma Elementary School (Masten & Hurd)	831,225.00

Lakeside Elementary School (Clarence Mayhew)	\$ 858,330.00
Sunset "A" Elementary School (Ward & Bolles)	858,330.00
Sunset "B" Elementary School (Stone & Mulloy)	831,225.00
Southeast Junior High School (Gardner Dailey)	1,987,712.00
Sunset Comm. Junior High (Thomsen & Wilson)	2,258,764.00
Bret Harte Elementary (Hobart & Kerr)	903,506.00
Candlestick Cove Elementary (Wurster, Bernardi & Emmons)	993,856.00
Twin Peaks Elementary School (Kirby & Mulvin)	406,578.00
Quintara & 14th Elementary (Kump Associates)	1,084,207.00
Funston & Santiago Jr. High (Kump Associates)	2,710,517.00
Fremont Elementary School (Hertzka & Knowles)	813,155.00
Ridgepoint No. 3 Elementary (Dodge A. Riedy)	998,374.00
Silver Avenue Elementary (W. D. Peugh)	903,506.00
Burnett Elementary School (Meyer & Evers)	745,392.00
Starr King Elementary School (Blanchard, Maher & Paulus)	903,506.00
Lake Merced Elementary School (John L. Reid)	903,506.00
Stephen Douglas Elementary (Cantin, Cantin, & Page)	361,402.00
Geary Elementary Addition (J. A. Riddell)	135,526.00
San Miguel Elementary Addn. (Mario Ciampi)	677,629.00
Patrick Henry Elementary (W. D. Peugh)	578,243.00
Commodore Stockton Elementary (Angus McSweeney)	677,629.00

APPENDIX II

Delta & Wilde Home School (Alfred W. Johnson)	\$ 289,122.00
Lincoln High School Addition (Weihe, Frick, & Kruse)	2,889,000.00
Girls' High School Addition (Bliss & Hurt, Trudell & Berger)	903,506.00
San Francisco City College (Milton T. Pflueger)	2,258,764.00
Washington High School Addn. (Milton T. Pflueger)	225,876.00
Ocean View Heights Home School (Cantin, Cantin, & Page)	271,052.00
	\$29,095,180.00

School Bond Modernization Program

Andrew Jackson Elementary (Miscellaneous Alterations)	\$ 60,000.00
Commerce High School (New Bleachers)	65,000.00
Emerson Elementary School (Miscellaneous Alterations)	40,000.00
Frank McCoppin Elementary School (New Fire Escape)	8,000.00
Galileo High School (Acoustical Tile in Cafe)	4,000.00
Gundalupe Elementary School (New Cafeteria Building)	60,000.00
Horace Mann Junior High School (Alterations to Girls' Gym)	10,000.00
Jefferson Elementary School (Miscellaneous Alterations)	40,000.00
Pacific Heights Elementary (New Cafe & Alterations)	49,000.00
Raphael Weill Elementary School (New roof deck and parapets)	14,000.00
Sutro Elementary School (Miscellaneous Alterations)	15,000.00
Repave Yards at 23 Elementary Schools	200,000.00
	\$565,000.00

Fire Department

New Buildings

32nd Avenue Fire House (J. S. Gould)	\$ 204,133.00
Lake Merced Fire House (A. R. Williams)	200,000.00
	\$ 404,133.00

Public Library

New Buildings

Marina Branch Library (Kent & Hass)	\$ 150,000.00
Parkside Branch Library (Appleton & Wolfard)	140,000.00
Potrero Branch Library (Pollack & Pope)	68,585.00
Excelsior Branch Library (J. S. Gould) Pending selection of the Site.	125,000.00

Miscellaneous Alterations

Main Library Achenbach Collection New Display Area (Dodge A. Riedy)	15,000.00
	\$ 498,585.00

Department of Public Health

San Francisco Hospital

Alterations required by Fire Dept. (Pending receipt of work order)	\$ 100,000.00
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Laguna Honda Home

Repairs to Electric Generating Set	4,000.00
	\$ 104,000.00

Park Commission

M. H. DeYoung Memorial Museum

Landscaping of Courts (Eckbo, Royston, & Williams)	\$ 6,000.00
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Golden Gate Park

Sharon Building Alterations

(bids rec'd 9-14-49) Project
abandoned due to high cost.

\$ 42,568.00

\$ 48,568.00

Civic Center

Civic Auditorium

Elevated Seating Platforms

\$ 25,000.00

Juvenile Court

Log Cabin Ranch

New Incinerator

(Dodge A. Riedy)

\$ 3,000.00

Youth Guidance Center

Landscape Work

(William G. Merchant)

20,000.00

Court Room Fixtures

(William G. Merchant)

8,000.00

\$ 31,000.00

Department of Public Works

Miscellaneous

Office Alterations

(Dodge A. Riedy)

\$ 5,000.00

Asphalt Yard Reconstruction

(Jessie Rosenwald, Engineer)

35,000.00

\$ 40,000.00

Total Work Under Preparation

\$ 30,811,466.00

RECAPITULATION

Work Completed

Board of Education	\$ 985,327.16
Public Health	68,343.70
Park Commission	251,502.83
Fire Department	240,901.72
City Hall	100,644.13
Civic Center	19,004.10
	\$ 1,665,723.64

Contracts under Construction

Board of Education	\$3,936,887.00
Public Health	209,091.00
Fire Department	15,779.00
Police Department	142,800.00
City Hall	90,914.00
Park Commission	17,667.00
Department of Public Works	515,402.00
Juvenile Court	3,782,538.00
	\$ 8,711,078.00

Work under Preparation

Board of Education	\$29,660,180.00
Public Health	104,000.00
Fire Department	404,133.00
Public Library	498,585.00
Civic Center	25,000.00
Park Commission	48,568.00
Juvenile Court	31,000.00
Department of Public Works	40,000.00
	\$30,811,466.00
Grand Total	\$41,188,267.64

TABLE I

Active Applications to State for Planning Assistance
Total of 15 Applications - As of June 30, 1950

State No.		Construction Cost		Plan Cost		State Half
SEWERS		Inc.	Plans	Total	After July '44	
*74	Lake Merced Dist.	\$ 2,600,000		\$ 78,000	\$ 78,000	\$39,000
80	18th St. A, B, C	560,000		17,000	4,000	2,000
*81	Lake St. Dist.	830,000		30,000	10,000	5,000
82	Islais Creek Dist.	400,000		12,000	12,000	6,000
84	Lower Market St. Dist.	460,000		12,000	12,000	6,000
86	Commercial St. Dist.	140,000		4,000	4,000	2,000
90	14th St. Valencia - Dolores	60,000		2,000	2,000	1,000
*91	23rd St. 3rd to Iowa	35,000		2,000	2,000	1,000
94	7th St. under the SPRR Tracks	7,000		400	400	200
834	Franklin St.	136,000		4,000	4,000	2,000
SUB-TOTAL SEWER PROJECTS		\$ 5,228,000		\$161,400	\$128,400	\$64,200
HIGHWAYS						
*102	Army, San Jose Ave. Guerrero & Clip- per Project	\$ 1,011,000		\$ 55,000	\$ 22,000	\$11,000
104	Portola Drive	3,154,000		173,000	140,000	70,000
*106	13th St. Market - Bryant	220,000		13,200	13,200	6,600
*108	Monterey Blvd.	245,000		17,500	14,255	7,127
*110	Mission Viaduct Reconstr.	220,000		14,000	10,934	5,467
SUB-TOTAL HIGHWAY PROJECTS		\$ 4,850,000		\$272,700	\$200,389	\$100,194
GRAND TOTAL						
15 Active Projects		\$10,078,000		\$434,100	\$328,789	\$164,394

* Projects on which partial
payments have been received.

TABLE I
SEWAGE PUMPING STATION CAPACITIES, ETC.

Name of Station & Location	Units	Type	Size of Pump Discharge Inches	Actual Total Head Ft.	Actual Capacity G.P.M. Each	Rated Horse Power	Rated Voltage	Rated Speed R.P.M.	Year Built	Approx. Contract Cost	Sewage is Pumped into
Marina nr Casa Way Park Merced	4 1 2	Horizontal Single Stage 2-Horizontal Single Stage Pumps in Series	10 10 6	70 34 131 144	4350 2600 1800 2500	100/60 30 50	440 440 440	870/695 870 1170	1937 1944	\$140,000 60,000	N Pt. Outfall from Pierce Eucalyptus Dr. Sewer from Stanley St. Diversion
Lake Merced Blvd.	3	Vertical Single Stage	6	20	2100	25	220	870	1905) 1908)	20,000	N Pt. Main from District nr. Lower Market St.
Commercial St. nr Drumm St.	1	Horizontal Single Stage	4	29	1050	15	Engine Driven	1600	1935) 1945	3,550	Richmond-Sunset Sewer Tunnel at 25th Ave.
Sea Cliff #2 nr Sea Cliff Drive	2 1	Horizontal Pumping unit 2-Horizontal Single Stage	4 4	100	650	25	220	1750	1940	57,500	& Lake St.
Vicente at Gt. Highway	2	Vertical Single Stage	6	50	900	25	230	870	1928	4,500	Sunset Interceptor from Dist. nr Sloot Blvd. & Gt. Hwy. from Shore
Fitzgerald nr Griffith St.	*1 1	Vertical Single Stage Ditto	4 4	47 54	350 460	15 15	220 220	1750 1165	1929	2,660 1,750	Area Sea Cliff Sta. #2 from China Beach Area
Sea Cliff #1 nr Sea Cliff Dr.	*2 1	Vertical Single Stage	4 3	51 57	530 170	15 5	220 220	1150 1750	1944	1,500	Sunset Interceptor from Pinelake Park
-Pine Lake nr Crestlake & Wawona Drs	2	Vertical Single Stage	4	29	310	5	220	860	1948	44,500	N Pt. Outfall from Beach St. for certain Sewer
Hyde St. at Jefferson	2	Vertical	5	96	1300	50	440	1150	1947	35,000	Eucalyptus Dr. excluding Sewer from Stanley St. Diver'n for certain ley St. Shaughnessy Blvd.
Lakeshore pk., -Lake Merced Blvd.	*2	Vertical Single Stage	4	59	360	10	220	1755	1949	8,250	O'Shaughnessy Blvd.
LaPlace Canyon at Portola Dr. Fulton St.	2	Vertical	5	55	800	20	220	900	1950	90,000	46th Avenue at Fulton St.

-Temporary station. *Submerged pump. All pumps are centrifugal type, motor driven, unless otherwise noted.

TABLE II
MARINA SEWAGE PUMPING STATION 1949-50
CONTRIBUTING POPULATION 63,000 DISTRICT AREA 1,125 ACRES
AVERAGE OPERATING HEAD 38.0 FT.

PUMPAGE IN MILLION GALLONS				POWER Consumed By Pumps Per Month		K.W.H. By Lights and Auxil's Per Month		K.W.H. Per Million Foot gallon	
Total Per Month		Daily Average		Max Per Day		Min Per Day		Million Foot Gallon Per Month	
July 1949	177.1	5.71	6.325	4.387	6729.8	31680	668	4.73	
Aug	177.2	5.71	6.012	4.756	6733.6	34080	776	5.06	
Sept.	173.4	5.71	6.425	4.462	6589.2	29760	876	4.51	
Oct.	183.0	6.10	6.262	4.612	6954.0	33600	810	4.83	
Nov.	171.5	5.71	6.362	4.325	6517.0	34560	848	4.96	
Dec.	186.8	6.22	8.412	4.675	7098.4	34560	830	4.86	
Jan. 1950	192.9	6.22	8.500	4.675	7330.2	37920	650	5.17	
Feb.	185.8	6.63	8.912	5.500	7060.4	38880	690	5.50	
March	190.7	6.15	7.250	4.325	7246.6	31200	696	4.30	
Apr.	168.8	5.62	7.675	4.875	6414.4	35520	700	5.53	
May	181.9	5.86	6.975	4.875	6912.2	35520	718	5.13	
June	176.4	5.88	7.162	4.925	6703.2	32160	626	4.79	
Total Per Year	2165.5	5.96			8236.9	409440	8880	4.97	Average

Average overall efficiency of each pump and its motor 63%

TABLE # III
COMMERCIAL STREET SEWAGE PUMPING STATION 1949-1950
CONTRIBUTING POPULATION 14,000 DISTRICT AREA 92.5 ACRES
AVERAGE OPERATING HEAD 20.0 FT.

PUMPAGE IN MILLION GALLON

	Total Per Month	Daily Average	Max. Per Day	Min. Per Day	Million Foot Gallons Per Month	POWER		Consumed By Pumps Per Month	K.W.H.		Consumed By Lights & Auxil's Per Month	Per Million Foot Gallons
July 1949	21.09	.68	1.07	.62	421.8			3190			422	6.65
Aug.	21.73	.70	.82	.67	434.6			2860			544	6.60
Sept.	19.62	.65	.82	.60	392.4			2670			578	6.80
Oct.	19.38	.62	.81	.61	387.6			2640			408	6.75
Nov.	20.88	.69	.96	.65	417.6			2780			354	6.68
Dec.	22.29	.72	.98	.59	445.8			2950			592	6.60
Jan. 1950	24.05	.77	1.32	.60	481.0			3030			502	6.30
Feb.	20.47	.73	1.28	.65	409.4			2730			480	6.68
March	21.48	.69	1.22	.67	429.6			2830			510	6.60
April	19.70	.65	.93	.67	394.0			2760			502	6.70
May	21.33	.68	.94	.60	426.6			2840			501	6.65
June	19.60	.65	.96	.65	392.0			2660			698	6.80
Total												
Per Year	251.62	.68			5032.4			33940			6091	6.74 Average

Average Overall Efficiency of Each Pump and Motor - 46.5%

TABLE IV
SEA CLIFF SEWAGE PUMPING STATION #1

1949 - 1950

CONTRIBUTING POPULATION 50
AVERAGE OPERATING HEAD 49.0 FT.
DISTRICT AREA - 4 ACRES

PUMPAGE IN MILLION GALLONS

POWER - KWH
Consumed
By Pumps
By Lights
& Auxil's.
Per Month

KWH Per
Million
Foot
Gallons

Total Per Month	Daily Average	Max. Per Day	Min. Per Day	Million Foot Gallons Per Month	Consumed By Pumps Per Month	Consumed By Lights & Auxil's. Per Month	KWH Per Million Foot Gallons
July 1949							
Aug	.0281	.0009	Data not available	1.406	10	Negligible	7.11
Sept.	.0646	.002		3.165	23		7.26
Oct.	.0583	.0019		2.856	21		7.35
Nov.	.0689	.0022		3.376	25		7.40
Dec.	.0683	.0023		3.346	25		7.47
Jan. 1950	.0567	.0018		2.778	21		7.55
Feb.	.0826	.0026		4.047	30		7.41
Mar.	.1303	.0046		5.894	44		7.46
Apr.	.0768	.0024		3.763	28		7.44
May	.0545	.0017		2.670	20		7.49
June	.0657	.0021		3.219	24		7.45
	.0636	.0021		3.116	24		7.70
Total	.8184	.0022		39.636	295		7.44 Average

APPENDIX IV

Average Overall Efficiency of Each Pump and Motor - 46.5%

TABLE V	
SEA CLIFF SEWAGE PUMPING STATION #2	1949-1950
CONTRIBUTING POPULATION 2400	DISTRICT AREA 83.4 ACRES
AVERAGE OPERATING HEAD 94 FT.	

PUMPAGE IN MILLION GALLONS				POWER - KWH Consumed		KWH Per		
	Total Per Month	Daily Average	Max. Per Day	Min. Per Day	Million Foot Gallons Per Month	Consumed By Pumps Per Month	By Lights & Auxil's. Per Month	Million Foot Gallons
July 1949	4.02	.130	.147	.121	377	2290	430	6.08
Aug.	4.06	.130	.195	.122	381	2310	410	6.08
Sept.	4.38	.146	.165	.130	411	2490	310	6.07
Oct.	4.92	.158	.190	.139	462	2790	410	6.05
Nov.	5.47	.182	.247	.140	514	3100	420	6.05
Dec.	7.60	.245	.268	.137	714	4330	320	6.07
Jan. 1950	5.16	.166	.217	.140	485	2930	680	6.05
Feb.	4.91	.175	.181	.154	461	2780	1080	6.05
Mar.	4.89	.157	.263	.142	459	2780	1060	6.06
Apr.	5.12	.170	.233	.144	481	2900	620	6.04
May	4.73	.152	.367	.130	444	2690	350	6.06
June	4.28	.142	.185	.131	402	2430	610	6.06
Total	59.54	1.63			5591	33820	6700	6.40 Average

Average Overall Efficiency of Each Pump and Motor - 56.8%

Station	By-Passed	7 days due to Repair in Richmond Tunnel
" "	" "	11 " " Rain

TABLE VI
PARK MERCED SEWAGE PUMPING STATION 1949-1950
CONTRIBUTING POPULATION 7500
AVERAGE OPERATING HEAD 123.0 FT.
DISTRICT AREA 212 ACRES

PUMPAGE IN MILLION GALLONS				POWER - KWH				KWH Per Million Foot Gallons
Total Per Month	Daily Average	Max. Per Day	Min. Per Day	Million Foot Gallons Per Month	Consumed By Pumps Per Month	Consumed By Lights & Auxil's. Per Month		
July 1949	10.97	.410	.298	1215.7	8540	220		7.02
Aug.	10.31	.407	.377	1268.1	8190	230		6.45
Sept.	10.31	.514	.350	1268.1	8070	150		6.36
Oct.	12.41	.591	.360	1526.4	9960	160		6.52
Nov.	11.50	.578	.331	1414.5	9320	430		6.58
Dec.	11.91	.706	.370	1464.9	9360	430		6.38
Jan., 1950	9.95	.613	.360	1233.8	7980	2050		6.44
Feb.	9.57	.475	.365	1177.1	7480	1450		6.35
Mar.	12.99	1.205	.555	1597.7	10580	1160		6.62
Apr.	14.08	.617	.343	1731.8	11420	1050		6.60
May	14.46	1.036	.355	1778.5	12130	1010		6.82
June	2.17	1.148	.350	267.0	1940	560		7.26
Total	130.63			15943.6	104970	8900		6.58 Average

Average Overall Efficiency of Each Pump and Motor 56.8%

TABLE VII
VICENTE SEWAGE PUMPING STATION
1949-1950
CONTRIBUTING POPULATION 2100
AVERAGE OPERATING HEAD 56.0 FT.
DISTRICT AREA 51.4 ACRES

PUMPAGE IN MILLION GALLONS				POWER - K.W.H.			KWH Per Million Foot Gallons
Total Per Month	Daily Average	Million Foot Gallons Per Month	Max. Per Day	Min. Per Day	Consumed By Pumps Per Month	Consumed By Lights & Auxil's Per Month	
July 1949	.126	218.9	Data Not Available		1550	Negligible	7.10
Aug.	.142	246.4			1750		6.98
Sept.	.131	220.6			1570		7.10
Oct.	.122	212.2			1510		6.94
Nov.	.158	265.5			1820		6.94
Dec.	.171	296.8			2040		6.95
Jan. 1950	.177	307.4			2180		6.98
Feb.	.165	259.2			1770		6.98
Mar.	.165	287.8			1970		6.98
Apr.	.144	242.4			1720		7.10
May	.154	267.1			1900		7.10
June	.128	216.1			1540		7.10
Total	.148	3040.4			21320		7.02 Average

Average Overall Efficiency of Each Pump and Motor 44.5%

TABLE VIII
FITZGERALD SEWAGE PUMPING STATION
1949-1950
DISTRICT AREA 30 ACRES
CONTRIBUTING POPULATION 800
AVERAGE OPERATING HEAD 48.0 FT.

PUMPAGE IN MILLION GALLONS				POWER - K. W. H.		KWH Per Million Foot Gallons
Total Per Month	Daily Average	Million Foot Gallons Per Month	Max. Per Day	Min. Per Day	Consumed By Pumps Per Month	
					Consumed By Lights & Auxil's Per Month	
July 1949	.090	134.4	Data Not Available		910	6.82
Aug	.051	76.3			520	6.80
Sept.	.051	73.9			550	6.80
Oct.	.059	87.8			600	6.88
Nov.	.048	69.1			500	7.02
Dec.	.065	97.4			700	7.02
Jan. 1950	.056	84.4			590	6.95
Feb. 2 pumps	.126	169.4			1180	6.95
ad.						
Mar.	.091	135.3			940	7.00
Apr.	.125	180.4			1250	6.94
May	.086	128.6			890	6.90
June	.113	163.6			1110	6.80
Total Per Year	.0799	1400.60			9740	6.95 Average

Average Overall Efficiency of Each Pump and Motor 41.7%

TABLE IX
PINE LAKE SEWAGE PUMPING STATION

1949-1950

CONTRIBUTING POPULATION 136
DISTRICT AREA ~ 3 ACRES
AVERAGE OPERATING HEAD ~ 56.0 FT.

PUMPAGE IN MILLION GALLONS				POWER - K.W.H.		Consumed		KWH Per	
Total	Daily	Million	Max.	Min.	Consumed	By Pumps	By Lights	Million	
Per Month	Average	Foot Gallons	Per Day	Per Day	Per Month	Per Month	Per Month	Foot	Gallons
		Per Month							
July 1949	.0290	1.624	Data Not Available		12	Negligible		7.60	
Aug.	.0974	5.454			41			7.55	
Sept.	.1411	7.901			57			7.30	
Oct.	.1259	7.050			51			7.24	
Nov.	.1318	7.380			54			7.32	
Dec.	.2414	13.518			98			7.25	
Jan. 1950	.3279	18.362			132			7.22	
Feb.	.1147	6.423			47			7.32	
Mar.	.1569	8.786			64			7.29	
Apr.	.1730	9.688			70			7.30	
May	.1653	9.256			65			7.11	
June	.1768	9.900			72			7.21	
Total	1.8825	105.342			763			7.24	
Per Year								Average	
Average Overall Efficiency of each pump and motor				35.4%					

TABLE X
HYDE STREET SEWAGE PUMPING STATION 1949-1950
CONTRIBUTING POPULATION, INDUSTRIAL & RECREATIONAL DISTRICT AREA 14 ACRES
AVERAGE OPERATING HEAD 29.0 FT.

PUMPAGE IN MILLION GALLONS				POWER - K. W. H.			
	Total Per Month	Daily Average	Max. Per Day	Min. Per Day	Million Foot Gallons		KWH Per Million Foot Gallons
					Per Month	By Pumps Per Month	
		Data	Not	Available		Consumed By Lights & Auxil's Per Month	
July 1949	.8149				23.63	183	7.76
Aug.	.9444				27.38	212	7.74
Sept.	.8683				25.03	194	7.75
Oct.	1.1587				33.60	260	7.73
Nov.	.3992				11.57	90	7.76
Dec.	.3862				11.19	87	7.79
Jan. 1950	.3786				10.97	85	7.72
Feb.	.4420				12.81	99	7.73
March	.3496				10.13	78	7.76
Apr.	.3445				9.99	77	7.78
May	.3346				9.70	75	7.79
June	.3252				9.43	73	7.78
Total for Year	6.7462				195.64	1513	7.73 Average

TABLE XI
SEWAGE PUMPING STATIONS
FISCAL YEAR 1949 - 1950

COST OF OPERATION

	Marina	Com- mercial	Sea Cliff #1	Cliff #2	Park Merced	Vicente	Fitz- gerald	Pine Lake	Hyde Street	Lake Shore	La Place Canyon	Fulton Street
Salaries	\$10,431	\$8,800	\$50	\$4,792	\$4,792	\$1,035	\$700	\$127	\$700	\$75	\$50	\$500
Contractual Services	2,340	890	85	785	630	410	790	97	50	122	21	
Equipment Replacement	1,081	390										
Materials & Supplies	950	376	30	157	284	92	67	43	30		25	
Heat,Light & Power	5,868	826	6	839	2,035	429	180	15	46		31	38
	\$20,670	\$11,282	\$171	\$6,573	\$7,741	\$1,966	\$1,737	\$182	\$826	\$197	\$127	\$538
Additions & Improvement	\$200											
Cost of Operation Per M.G.	\$9.50	\$44.83	\$208	\$110	\$59.25	\$36.19	\$59.50	\$96.80	\$96.80			
Cost of Operation Per Capita	.32	.80	3.42	2.73	1.03	0.93	2.71	1.33				

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

COST OF OPERATION

FISCAL YEAR 1949-1950

Item of Expenditure	Total Plant Operation	Sewage Treatment with Chlorination	Sunset Pumping Plant	Sludge Disposal Conditioning & Filtration	Sewage Treatment without Chlorination
Permanent Salaries	\$64,069	\$42,163	\$7,995	\$13,911	\$37,017
Holidays	1,108	898	150	60	833
Overtime	67	37	25	5	35
Temporary Salaries	1,631	1,135	213	283	1,043
Wages	13,547	8,324	1,674	3,549	7,257
Contractual Services	12,937	8,590	2,148	2,199	8,461
Heat, Light & Power	13,957	8,837	4,099	1,021	7,453
Materials & Supplies	23,625	19,479	267	3,879	2,159
Totals	\$130,941	\$89,463	\$16,571	\$24,907	\$64,258
Richmond & Sunset Flow (Gravity)	2,810 MG				
Sunset Flow	1,677 MG				
	4,487 MG				
Cost of Operation per MG	\$29.18 For 4487 MG	\$19.94 For 4487 MG	\$9.88 For 1677 MG	\$5.55 For 4487 MG	\$14.32 For 4487 MG
Estimated cost per capita (based on 230,000 population)	\$0.57 per year				

5,405 cu. yd. filter cake, estimated value \$25,200, delivered to City Parks during year for use as fertilizer

Additional Expenditures

Plant Improvements	\$ 389
Painting	3,555
Office Engineering	1,144
Equipment	456
Total	\$5,544

The Sunset Pumping Plant was shut down during storms in order to avoid handling excessive quantities of sand in the sump.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT
TABLE 1 - SEWAGE TREATMENT DATA

FISCAL YEAR 1949-1950

Month	Flow, Million Gravity Pumped	Gallons Pumped Total	Days By-Passed Gravity Pumped Flow	Rain Inches	*Susp. Solids, ppm			5-Day BOD, ppm		
					Raw	Eff	Rem	Raw	Eff	Rem
July 1949	205.3	143.6	348.9	.05	340	58	83	350	115	67
Aug	209.1	144.8	353.9	.02	310	72	77	315	145	54
Sept	209.5	145.1	354.6	tr	300	74	75	290	145	50
Oct	230.6	150.9	381.5	.15	310	58	81	280	125	55
Nov	236.6	144.6	381.2	1.65	275	67	76	250	125	50
Dec	250.5	127.9	378.4	2.44	255	61	76	225	115	49
Jan 1950	283.9	95.8	379.7	6.63	240	91	62	245	140	43
Feb	231.8	133.3	365.1	2.77	270	94	65	215	135	37
Mar	257.1	153.7	410.8	1.90	245	105	57	235	170	28
Apr	233.6	147.9	381.5	3.0	245	105	57	230	140	39
May	238.2	149.8	388.0	.29	275	96	65	295	175	41
June	223.6	139.7	363.3	.11	300	98	67	300	145	52
Total	2809.8	1677.1	4486.9	0.0	35.8	17.10		280	82	71
Wt. Avg**								270	140	48

By-Passing: Pumped flow - 35.8 days, rain

* Suspended solids by Gooch crucible method. Raw sewage sampled after mechanical bar racks.

** Weighted averages calculated from monthly total flows

RICHMOND-SUNSET SEWAGE TREATMENT PLANT
TABLE - 1 SEWAGE TREATMENT DATA (Cont'd)

FISCAL YEAR 1949-1950

Month	Alkalinity as CaCO ₃ ,ppm		Chlorides, ppm		Sewage Temp °F	Screen- ings, cu. ft.	Grease, Gallons	Sand, cu. yd.		Chlorination.	
	Raw	Eff	Raw	Eff				Pre- Treat	Sun- set	Pre	Post
July 1949	205	205	57	73	70	515	27,900	95	32	9,320	27,640
Aug	210	205	61	71	71	478	27,900	110	36	9,300	27,710
Sept	215	205	52	63	73	490	27,000	89	30	9,920	28,140
Oct	215	200	63	73	71	563	27,900	152	38	10,480	30,520
Nov	205	180	52	61	70	567	27,000	238	73	10,120	22,630
Dec	185	160	56	65	65	597	27,900	259	99	10,330	23,180
Jan 1950	150	135	55	59	58	594	27,900	285	86	10,150	17,440
Feb	180	165	59	61	60	537	25,200	205	73	9,950	25,340
Mar	175	180	66	74	63	600	27,900	283	115	11,180	29,460
Apr	190	180	67	68	66	596	27,000	208	76	10,520	28,160
May	200	210	70	73	68	658	27,900	195	78	10,650	29,960
June	200	200	86	92	69	658	27,000	156	68	9,930	29,100
Total						6,853	330,300	2,275	804	121,850	319,280
Wt. Avg***	195	185	62	69	67						

* Removed by Pre-Treatment bar racks only; screenings from Sunset sump not included.

** Approximate removals from grit-grease tanks; additional removals in Mixing and Sedimentation Building not included.

*** Weighted averages calculated from monthly total flows.

Pre-Chlorination - 30 lbs. per million gallons

Post-Chlorination - 9 AM to 6 PM, 100 lbs per million gallons

6 PM to 9 AM, 80 " "

No post-chlorination when Sunset flow by-passed

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 2 - SLUDGE TO DIGESTER AND GAS PRODUCTION

FISCAL YEAR 1949-1950

Raw Sludge to Digester								Digester	
Month	M Gallons	% Total Solids	Dry Solids M lb	% Volatile	Volatile M lb	Metered Gas To Boilers	Production-M To Waste	cu.ft.* Total	Temp F
July 1949	2,394.0	4.28	859.7	82.8	711.8	3,092	3,522	6,614	95
Aug	2,292.9	4.19	806.2	83.0	668.9	3,038	3,792	6,830	95
Sept	2,195.5	4.15	764.5	82.9	633.8	2,955**	3,913	6,868**	95
Oct	2,336.4	4.26	836.6	82.6	691.0	3,226	3,776	7,002	95
Nov	2,153.1	4.23	765.7	81.4	623.6	3,108	3,197	6,305	95
Dec	2,036.1	3.84	656.9	81.5	535.4	3,209	2,467	5,676	93
Jan 1950	1,614.4	3.89	527.6	80.1	422.4	3,022	1,774	4,796	92
Feb	1,894.6	3.92	624.5	83.1	518.9	2,799	1,822	4,621	94
Mar	2,026.0	4.03	685.9	82.4	565.3	3,015	2,130	5,145	92
Apr	2,102.2	3.85	679.1	83.1	564.4	3,299	2,276	5,575	94
May	2,392.6	3.84	771.7	83.7	646.2	3,626	2,327	5,953	94
June	2,410.4	4.11	833.1	81.6	679.8	3,421	1,463	4,884	93
Total	25,848.2		8,811.5		7,261.5	37,810	32,459	70,269	
Wt Avg***		4.06		82.4					94

* Some leakage occurs at floating gas holder seal in secondary digester

** Estimated-meter to boilers not registering correctly

*** Based on accumulated totals for year. All raw sludge computations based on weight of 8.40 pounds per gallon.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 3 - DIGESTED SLUDGE TO ELUTRIATION*

FISCAL YEAR 1949-1950

Month	Sludge, Thousands of Gallons		% Total Solids		Dry Solids, Thousands of lb	
	From Primary	From Secondary	From Primary	From Secondary	From Primary	From Secondary
July 1949	650.2	235.5	885.7	1.22	5.67	2.40
Aug	284.1	199.2	483.3	2.40	4.97	3.46
Sept	730.3		730.3	2.33		2.33
Oct	869.3		869.3	2.52		2.52
Nov	714.4		714.4	2.71		2.71
Dec	738.4		738.4	2.93		2.93
Jan 1940	670.0		670.0	3.16		3.16
Feb	692.5		692.5	2.99		2.99
Mar	927.0		927.0	3.20		3.20
Apr		605.8	605.8		5.58	5.58
May		586.0	586.0		5.30	5.30
June		502.9	502.9		4.39	4.39
Total	6276.2	2129.4	8405.6	2.65	5.16	3.30
Wt Avg**					1396.2	937.2
						2333.4

* Metered quantities to two-stage elutriation; supernatant overflow not included.

** Based on accumulated totals for year and respective sludge weights of 8.40, 8.53, and 8.42 pounds per gallon for primary, secondary, and net sludges.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT
TABLE 3 - DIGESTED SLUDGE TO ELUTRIATION* (Cont'd)
FISCAL YEAR 1949-1950

Month	% Volatile		Volatile, Thousands of lb		Avg Alk as CaCO ₃ , ppm
	From Primary	From Secondary	From Primary	From Secondary	
July 1949	64.4	62.4	42.8	70.0	1640
Aug	64.0	62.6	36.6	52.0	1620
Sept	63.6		90.9		2070
Oct	62.8		115.5		1940
Nov	61.8		100.6		1690
Dec	60.9		110.8		1620
Jan 1950	61.0		108.3		1540
Feb	60.4		105.1		1400
Mar	60.4		150.7		1400
Apr		60.2		173.8	1220
May		60.1		159.3	1650
June		60.5		113.8	1890
Total	61.7	60.7	861.3	568.9	1640
Wt Avg**		61.3		1430.2	

* Metered quantities to two-stage elutriation; supernatant overflow not included

** Based on accumulated totals for year

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 4 - VACUUM FILTER OPERATION

FISCAL YEAR 1949-1950

Month	Gallons	% Total To Filters	Solids Filtrate	Solids M lb	% Volatile	Volatile M lb	Ash Mlb	Alk as CaCO ₃ , ppm
July 1949	630.2	3.88	0.24	204.1	63.0	128.5	75.6	410
Aug	629.8	3.95	0.28	206.6	62.8	129.7	76.9	420
Sept	443.2	3.89	0.26	143.6	62.5	89.8	53.8	440
Oct	471.2	4.14	0.26	161.9	62.0	100.4	61.5	450
Nov	475.6	4.33	0.20	172.6	60.6	104.6	68.0	450
Dec	437.1	4.52	0.17	166.2	60.8	100.9	65.3	410
Jan 1950	332.8	4.97	0.16	139.9	59.8	83.6	56.3	380
Feb	332.9	5.01	0.17	141.1	59.1	83.4	57.7	365
Mar	538.1	4.83	0.18	218.7	60.0	131.3	87.4	365
Apr	552.2	4.79	0.17	222.9	59.6	132.8	90.1	360
May	549.6	4.85	0.48	212.0	59.8	126.7	85.3	330
June	533.0	4.68	0.76	186.7	59.7	111.4	75.3	405
Total	5925.7			2176.3		1323.1	853.2	
Wt Avg*		4.45	0.29		60.8			400

* Based on accumulated totals for year, and sludge weight of 8.47 pounds per gallon

RICHMOND-SUNSET SEWAGE TREATMENT PLANT
TABLE 4 - VACUUM FILTER OPERATION (Cont'd)

FISCAL YEAR 1949-1950

Month	lb FeCl ₃	% FeCl ₃ on Solids	Hours Filter Operated	Filters Oper- ating*	lb Solids		Filter Cake M lb	Filter Cake M lb	Filter trate M lb Per hr	Filter Cake cu yds
					Per hr	Per sq ft Filter Per hr				
July 1949	8040	3.94	157.24	2	1300	3.25	71.0	704.9	29.7	576
Aug	8560**	4.14**	177.91	1.89	1160	3.07	71.0	712.4	26.3	616
Sept	6270	4.37	161.92	1.29	890	3.42	71.0	494.5	20.3	430
Oct	6560	4.05	137.33	1.86	1180	3.27	70.5	548.2	25.3	475
Nov	5650	3.27	132.36	2	1300	3.26	71.2	600.3	26.1	518
Dec	4270	2.57	122.51	1.89	1360	3.60	70.4	561.9	26.1	480
Jan 1950	3040	2.17	91.33	2	1530	3.83	70.1	467.9	26.0	402
Feb	3420	2.42	90.27	2	1560	3.90	69.2	457.2	26.3	361
Mar	5440	2.49	148.16	2	1480	3.70	70.1	732.1	26.1	628
Apr	5470	2.45	151.22	1.89	1470	3.89	69.7	735.1	26.1	705
May	5260	2.48	146.55	1.94	1450	3.74	69.3	691.3	27.6	630
June	5370	2.88	161.06	1.56	1160	3.72	70.1	625.0	24.6	540
Total	67350	3.09	1677.86	1.84	1300	3.53	70.3	7330.8		6361***
Wt Avg****									25.8	

* Equivalent number for operating hours in preceding column
** 5700 lb ferric chloride for 15 days and 4380 lb ferric sulfate for 8 days;
quantities are given in table as equivalent ferric chloride

*** 5405 cu yd to City Parks

956 cu yd to Public

**** Based on accumulated totals for year

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ANNUAL REPORT
OF THE
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF
SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30, 1951



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ANNUAL REPORT
OF THE
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF SAN FRANCISCO

FISCAL YEAR ENDING JUNE 30, 1951

ELMER E. ROBINSON

MAYOR

THOMAS A. BROOKS

CHIEF ADMINISTRATIVE OFFICER

SHERMAN P. DUCKEL

DIRECTOR OF PUBLIC WORKS



DIRECTOR OF PUBLIC WORKS AND STAFF

Top Row: J. J. McCloskey, R. H. Owens, J. H. Devitt, C. J. Geertz, B. Benas,
 Sup'r. Accounts Sr. Eng'r. Ass't. City Ass't. City Sr. Eng'r.
 Engineering Architect Eng'r. Engineering

2nd Row: H. H. Hanssen, Wm. T. Bonsor, S. J. Rosenblum, W. S. Merrill, Lester C. Bush, Emile F. Muheim,
 Sup't. Sup't. Sup't. Sup't. Sup't. Sup't.
 Bldg. Repair St. Cleaning Central Permit St. Repair Bldg. Insp. Sewer Repair

Front Dodge A. Riedy, Ralph G. Wadsworth, Sherman P. Duckel, L. J. Archer, F. W. McKenzie,

✓
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3512

MAYOR
ELMER E. ROBINSON

**CHIEF
ADMINISTRATIVE
OFFICER**
THOS. A. BROOKS

ORGANIZATION CHART

DEPARTMENT OF PUBLIC WORKS

JUNE 30, 1951

CITY AND COUNTY OF SAN FRANCISCO

DIRECTOR
SHERMAN P. DUCKEL

**ASST. DIRECTOR
ADMINISTRATIVE**
F. W. MCKENZIE

**ASST. DIRECTOR
MAINT. & OPERATION**
L. J. ARCHER

BUREAU OF ENGINEERING
CITY ENGINEER RALPH G. WADSWORTH

BUREAU OF BUILDING INSPECTION
SUPERINTENDENT LESTER C BUSH

BUREAU OF ARCHITECTURE
CITY ARCHITECT DODGE RIEDY

GENERAL OFFICE

BUREAU OF STREET REPAIR
SUPERINTENDENT W. S. MERRILL

BUREAU OF ACCOUNTS
SUPERVISOR (Acting) J. J. MCLOSKEY

BUREAU OF SEWER REPAIR
SUPERINTENDENT E. F. MUHEIM

CENTRAL PERMIT BUREAU
SUPERVISOR S. J. ROSENBLUM

BUREAU OF BUILDING REPAIR
SUPERINTENDENT H. H. HANSSEN

BUREAU OF STREET CLEANING
SUPERINTENDENT W. T. BONSOR

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS

OFFICE OF THE
DIRECTOR OF PUBLIC WORKS

November 8, 1951

200 CITY HALL
SAN FRANCISCO 2,
CALIFORNIA

Annual Report
1950-1951

Honorable Thomas A. Brooks
Chief Administrative Officer
City and County of San Francisco

Dear Sir:

I am submitting herewith the Annual Report of the Department of Public Works for the fiscal year 1951. This is in accordance with the requirements of Section 20, of the Charter of the City and County of San Francisco.

The past year has brought about a considerable change in the top personnel of this department. The new recently created position of Assistant Director of Public Works (Maintenance and Operation) was filled on September 27, 1950 by the appointment of Mr. L.J. Archer, former Senior Civil Engineer for the Public Utilities Commission. On the same date, Mr. F.W. McKenzie was appointed to the position of Assistant Director of Public Works (Administrative). Mr. McKenzie has been performing the duties of this position since February 1, 1950. On August 21, 1950, Mr. Lester C. Bush was appointed as Superintendent of the Bureau of Building Inspection. On October 1, 1950, Mr. Harry H. Hanssen was appointed as Superintendent of the Bureau of Building Repair. Also, on July 1, 1950, the Bureau of Streets was divided into two separate bureaus - the Bureau of Street Repair under Mr. W. S. Merrill, Superintendent, and the Bureau of Street Cleaning under Mr. W.T. Bonsor, Superintendent.

The reactivating of Federal Government controls on critical materials through the National Production Authority of the Department of Commerce has curtailed both private and public construction work in San Francisco. The restrictions on steel, copper, zinc, etc., were placed in effect in the latter part of 1950 and

a gradual tightening of the controls which has taken place resulted in the reduction of available critical materials for non-defense work. It now appears that unless a sudden change for the better develops in our world relations our heavy construction program will be greatly delayed.

In view of these recent developments I believe that the Department of Public Works was most fortunate in the fine progress made during the past several years in its construction program. Our three sewage treatment plants, totaling about \$16,000,000, are nearing completion; the Broadway Tunnel is about thirty percent completed and the necessary critical material is available for its completion. A large portion of our storm drain enlargement program, our traffic signal and street sign projects, all requiring critical materials, have been completed. As an aid to the Federal Government in its steel production program, this department has removed since 1948 from San Francisco's streets about 18,000 tons of class 'A' scrap in the form of abandoned street railway tracks. We are continuing with the removal of approximately 13,000 tons of rail still in our streets in conjunction with our street reconstruction program.

The Building construction program, as handled through the Bureau of Architecture, has continued with the construction of a library, fire house, police station, and a number of schools. The first contract of the construction of the \$4,300,000 Youth Guidance Center was completed in October 1950. A detailed report on buildings completed and under construction is included in this report.

To enumerate the projects completed by all bureaus and to list the fine records of the maintenance and operations bureaus in this letter would be repetitious as complete information on all of these is included in the report submitted.

All bureaus continued their assigned functions in the usual efficient manner and the fine spirit of co-operation shown by the

Bureau Heads and their staffs during the past year is acknowledged and appreciated by me.

I must also express my sincere thanks to Ralph G. Wadsworth, City Engineer, who supervised the preparation of this report.

Very truly yours,

A handwritten signature in cursive script, reading "Sherman P. Duckel", followed by a horizontal line.

Sherman P. Duckel, Director
Department of Public Works

BUREAU OF ENGINEERING

DEPARTMENT OF PUBLIC WORKS

ORGANIZATION CHART

JUNE 30, 1951

CITY ENGINEER
ASST CITY ENGINEER

STAFF DIVISIONS

ADMINISTRATION
CONTRACTS - PERSONNEL
PURCHASING

PROGRAMS & BUDGETS
STATE AID - PLANNING
PROGRAMS

LINE DIVISIONS

DIVISION OF STREETS & HIGHWAYS

- 1-STREET IMPROVEMENTS
 - (a) IMPROVEMENT PLANS
 - (b) ASSESSMENTS
 - (c) PERMITS & INSPECTIONS
- 2-HIGHWAYS
- 3-TRACK REMOVAL CONTRACTS
- 4-PLANS & RECORDS

DIVISION OF DESIGN

- 1-STRUCTURAL
- 2-SEWERS
- 3-SEWAGE DISPOSAL &
MECHANICAL
- 4-ELECTRICAL
- 5-UNDERGROUND STRUCTURES
- 6-ADMINISTRATIVE & CONTRACTS
- 7-SPECIFICATIONS

LINE DIVISIONS

DIVISION OF TRAFFIC ENGINEERING

- 1-DESIGN
- 2-OPERATION
- 3-MAINTENANCE

DIVISION OF SURVEYS & MAPPING

- 1-STREET GRADES
- 2-SUBDIVISIONS
- 3-SURVEYS

LINE DIVISIONS

DIVISION OF CONSTRUCTION

- 1-INSPECTION
- 2-TESTING LABORATORY
- 3-SANITARY FILL
- 4-RECORDS REPORTS

DIVISION OF SEWAGE & WASTE TREATMENT

- 1-RICHMOND SUNSET PLANT
- 2-NORTH POINT PLANT
- 3-SOUTHEAST PLANT
- 4-INVESTIGATIONS

BUREAU OF ENGINEERING
Ralph G. Wadsworth, City Engineer

FUNCTIONS OF THE BUREAU

In the last few years the major function of the Bureau of Engineering has been the planning and supervision of public improvements under the jurisdiction of the Department of Public Works, including highways, streets, bridges, tunnels, traffic signals, sewers, sewage pumping stations, sewage treatment plants and high pressure water mains. The Bureau also operates the sewage treatment plants, supervises garbage disposal, traffic striping traffic signal timing and parking meter installations, operates a testing laboratory and provides engineering services for other bureaus and departments when requested. Equally important are a number of service functions of a continuing nature, including control of street assessment proceedings, maintenance of street signs inspection of pavements and sidewalks, land and construction surveys, processing of subdivisions, and maintenance of maps and records for public information. A more detailed listing of the bureau's functions will be found in a later section headed, 'Functions of Divisions and Sections'.

GENERAL REVIEW OF YEAR'S WORK

In spite of an unavoidable reduction of working staff and the time and effort necessarily devoted to the supervision of several large contracts awarded in the two previous years, a substantial volume of new construction work was undertaken. Included were two large highway structures, reconstruction of two streets through slide areas, reconstruction and resurfacing of streets, removal of street car tracks, construction of large and small sewers, seventeen traffic signal and channelization contracts and a wide variety of other contracts, two of which were undertaken for other City departments. So far as feasible all of the construction projects awarded during the year are indicated graphically on the accompanying map.

MAJOR CONTRACTS AWARDED

Some of the more important projects for which contracts were awarded during the year are listed below, followed by the date of the award:

El Camino Del Mar reconstruction through slide area
in Lincoln Park

July 5, 1950

Mission Street Viaduct over Alemany Boulevard reconstruction	July 12, 1950
Phelan Beach recreation area - for Recreation and Park Department	September 8, 1950
Stanley Drive Underpass at Junipero Serra Boulevard	November 3, 1950
Farmers Market on Alemany Boulevard First unit of permanent construction	January 17, 1951
Bayshore Boulevard reconstruction between Army Street and Alemany Boulevard	March 2, 1951
Parker Avenue reconstruction through Lone Mountain slide	May 25, 1951

Descriptions of these and other projects, as well as the various activities of the Bureau not directly related to construction work, will be found in later sections of this report.



LOCATION OF CONTRACTS AWARDED
Fiscal Year 1950-1951

CURRENT CONTRACT DATA

The following tabulation shows the number and value of contracts awarded during the fiscal year 1950-1951 in each of the main categories of construction work. The tabulation also shows the total value of the work actually performed during the year on all contracts which were active, including those awarded in the preceding year. From this tabulation it will be noted that 133 contracts were undertaken having an aggregate value of \$5,189,313.83, and that the value of the work actually performed on the contracts under way was \$14,135,966.81.

A detailed listing of the contracts under way during the year will be found in Appendix I. A separate tabulation is given for each of the categories of construction work, the various tables being designated by the letters and figures shown in the first column of the following summary.

CURRENT CONTRACT DATA SUMMARY
SHOWING ALL CONTRACT WORK AWARDED OR UNDER WAY
JULY 1, 1950 To JUNE 30, 1951

Table	Type of Construction	Contracts Awarded No. Aggregate Value	Amount Expended Fiscal Year 1950-51
A	Major Thoroughfare	5 \$ 471,043.27	\$ 376,680.19
B-1	Streets-Private Contracts	44 752,813.00	672,909.00
B-2	Streets-Assessment Proceedings	26 200,797.62	235,203.15
B-3	Streets-Public Contract City Pay	8 61,693.72	41,090.22
B-4	Street Car Track Removal	5 987,332.31	1,055,776.14
C	Traffic Signals & Channelization	17 323,983.57	328,413.95
D-1	Sewers-Pipe-Vitrified Clay & Concrete	5 443,785.03	577,705.92
D-2	Sewers - Concrete Monolithic	4 778,312.45	1,051,000.76
E-1	Sewage Treatment Plants	0 0	6,998,989.73
E-2	Miscellaneous	19 1,169,552.86	2,798,197.75
TOTALS -		133 \$5,189,313.83	\$14,135,966.81

CONTRACT VOLUME

As compared with the preceding fiscal year, the number of contracts awarded and street improvements authorized was about 4% less and the aggregate value was 73% less, the latter large difference being due to the treatment plants and the Broadway Tunnel, which were included in last year's awards. On the other hand, contractors' expenditures were greater than last year because a large part of the work on the previously awarded contracts was performed during the year just closed. It was the working time devoted to supervision of these large carry-over jobs which was largely responsible for restricting the volume of new work awarded.

FUNDS

State gas tax funds are the principal support of the street and highway construction program. Bond funds are being used for removal of street car tracks, a portion of the traffic signals and the Broadway Tunnel. Sewers and treatment plants are being built principally from bond funds supplemented by State aid and limited amounts of general tax funds. Balances still available in the several bond funds on June 30, 1951 were as follows:

Sewer Bonds of 1944	\$ 3,106,500.49
Street Improvement Bonds of 1947	9,204,221.27
Sewage Treatment Bonds of 1948	5,387,983.96

ADMINISTRATION

The staff of the Bureau of Engineering is divided into eight divisions under the City Engineer. The Assistant City Engineer assists in general supervision and also acts as head of one of the major divisions. The organization plan as it existed on June 30, 1951 is shown on the accompanying chart.

FUNCTIONS OF DIVISIONS AND SECTIONS

The duties performed by the various divisions and sections making up the Bureau are briefly summarized in the following outline, which also shows the name and rank of the person who was in charge of each unit on June 30, 1951.

DIVISION OF STREETS AND HIGHWAYS - C.J. Geertz, Ass't. City Eng'r.

Street Improvement Section M.H. Levy, Engineer
Improvement Plans Unit C.C. Clifton, Ass't. Eng'r.

Permits for original street improvements
Plans and procedures for street improvement
and maintenance and sidewalk changes

Assessment Unit L.C. Whaley, Ass't. Eng'r.

Proceedings for street improvements and
assessment of benefits

Spur track permits
Reports on franchises and permits

Permit and Inspection Unit C.S. Hiden, Ass't. Eng'r.

Inspection of condition and use of streets
and sidewalks

Notification of parties responsible for
repairs or adjustments

Recommendations on various permit
applications.

Permits for street excavations and
inspection work

Investigation of claims for damages due
to condition of streets and sidewalks

Highway Section N.F. Newman, Engineer

Design of major thoroughfares
Control of building permits on future
rights of way

Track Removal Section J.L. Slater, Engineer

Plans and specifications for removal of
abandoned street car tracks and
reconstruction of streets

Plan and Record Section H.L. Reinfeld, Engineer

Line and grade diagrams for street and
sewer work performed under private
contract and assessment proceedings

Records of completed street work and
sewer installations

DIVISION OF DESIGN R.H. Owens, Senior Engineer

Structural Section N.F. Yde, Engineer

Structural plans for all major projects
Records of surface and ground water
conditions and plans for stabilizing
slide areas

Recommendations for maintenance of about
195 existing city-owned structures

- Sewer Section R.F. Lauenstein, Engineer
Plans for extension and reconstruction
of sewers and records of completed
work
Investigation and recommendations on
operation and maintenance
Review of plans for sewer systems in
new subdivisions
- Sewage Disposal and Mechanical Section M. Anaya, Engineer
Plans for sewage disposal plants
and intercepting sewer systems
Plans and specifications for mechanical
work on all projects undertaken by
the Department of Public Works, and
occasionally other departments
Plans for modification or improvement
of Auxiliary Water Supply System
- Electrical Section Ivan Sandberg, Engineer
Plans and specifications for electrical
work on street lighting, traffic
signal and sewage and pumping
station projects
Assists in field inspection of elec-
trical construction
- Underground Structure Section W.R. Daly, Sr. Draftsman
Records of underground structures and
foundation conditions
Maps showing existing underground
utilities in the vicinity of
contemplated improvements
Review of utility locations in new
subdivisions
- Specification Section E.J. Sierra, Engineer
Review, editing and assembly of
plans and specifications
- Administrative Section G. Galli, Engineer
Planning and coordinating of work
of the Division of Design
Supervision of reference files
for bureau
Preparation of cost estimates

DIVISION OF TRAFFIC ENGINEERING

Ross T. Shoaf, Engineer

Operation Section

Charles M. Lang, Asst. Engr.

Changes in existing traffic control devices
Investigation of public requests and complaints
Coordination with Construction Division and
Municipal Railway
Analysis of Accident Records

Design Section

William Marconi, Asst. Engr.

Functional design of traffic signals
and channelization
Reports on offstreet parking and long range
traffic planning
Conducting traffic counts, speed-and-delay
studies and other traffic surveys
Review of subdivision plans

Maintenance Section

James W. Challis, Asst. Engr.

Installation and maintenance of traffic
striping, parking meters, street signs and
traffic signs
Specifications for isolated channelization
installations and traffic control for
major construction projects
Purchase and work orders and maintenance of
records and files
Reports of damages to city property caused
by traffic accidents

SURVEYS AND MAPPING DIVISION

E.J. Cullen, Engineer

Field surveys for the department and
occasionally for other departments
and private parties
Investigations and reports on property
acquisition, street openings and
closings, and streets in new
subdivisions
Maintenance of official City maps and
records regarding streets

CONSTRUCTION DIVISION

Fred D. Brown, Asst. Engr.

Field Engineering Unit

Supervision and inspection of contract
work including layout as required
Annual inspection of structures under
jurisdiction of department
Inspection of sanitary fill

Testing Laboratory Unit P.F. Bernard, Engineering Chemist
 Physical and mechanical tests of materials
 used by Department of Public Works and
 for several other departments

DIVISION OF SEWAGE AND WASTE TREATMENT B. Benas, Sr. Engineer

Operation and maintenance of treatment plants
 Studies and recommendations for improvements
 Surveys of shore conditions and industrial wastes

ADMINISTRATIVE DIVISION L. Glick, Engineer

Contract administration and control, including
 progress payments and recommendation of
 acceptance
 Administrative work of the Bureau, including
 budgets, personnel, payroll and office
 services

PROGRAMS AND BUDGETS DIVISION A.V. Bowhay, Engineer

Preliminary material for annual budgets
 and long range programs
 Special studies of street, traffic, parking and
 transit problems
 Applications and claims for State Aid
 Project statements and records for gas tax
 projects

PERSONNEL

The staff of the Bureau decreased from 287 to 263 during the year, a net loss of 24 persons mostly in the engineering classifications. The following table shows the number of employees in the five major groups comprising the staff at the beginning and end of the year.

Personnel at Beginning and End of Fiscal Year

Division	July, 1, 1950	June 30, 1951	Decrease
Design and Administrative Divisions	131	113	18
Construction Division (Field)	60	60	
Survey Div. (Field and Office)	40	35	5
Clerical Staff	28	25	3
Plant Operation Force	28	30	- 2
Totals	287	263	24

The large loss in the Design and Administrative Divisions was due in part to the transfer, of men from the office to fill vacancies in the field staff of the Construction Division. The indicated increase in the Plant Operation Force is the net result of two operational changes. On July 1, 1950 the operating force of the Sewage Pumping Stations consisting of 8 men was dropped from the payroll as a result of the transfer of that function to the Department's Bureau of Sewer Repair. During the last few months of the year, the operating force for the sewage treatment plants was gradually expanded to provide a nucleus of trained men in anticipation of the starting of the new plants now under construction.

The loss of permanent employees to private industry and to the military services became quite heavy during the year. This was particularly true in the classes of Junior Engineer and Surveyor's Field Assistant. In an endeavor to fill outstanding permanent requisitions, the Civil Service Commission held Limited Tenure examinations for Junior Engineers and Surveyor's Field Assistants, as a result of which, the Bureau secured 6 Limited Tenure Junior Engineers and 6 Surveyor's Field Assistants.

RETIREMENTS

The following members of the staff retired after many years of meritorious service.

			Length of City Service
Arthur V. Coleman	7-1-50	Assistant Engineer II	22 Years
Herbert F. Hellwig	7-1-50	Assistant Engineer II	20 "
Charles M. Taylor	8-1-50	Engineer	39 "
William A. Lewis	10-1-50	Instrument Man	25 "
Clifford Jones	2-2-51	Chief of Party	39 "
Joseph M. Hayes	6-17-51	Draftsman	13 "
William T. Duffy	6-30-51	Junior Engineer	24 "
Ray Grier	6-30-51	Junior Engineer	24 "
Milton D. Johnson	6-30-51	Assistant Engineer II	35 "
Frank J. Lewis	6-30-51	Assistant Engineer II	41 "
Edward T. Rosenlund	6-30-51	Junior Engineer	5 "

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SEWAGE TREATMENT PLANT CONSTRUCTION PROGRAM

By the end of the fiscal year, all units of the new sewage treatment plants were nearing completion. Location of the major units are shown on the accompanying map and a general description will be found in the 1949-1950 Annual Report beginning on page 19. These plants will serve all parts of the City when the remaining necessary intercepting sewers have been constructed.

NORTH POINT SEWAGE TREATMENT PLANT

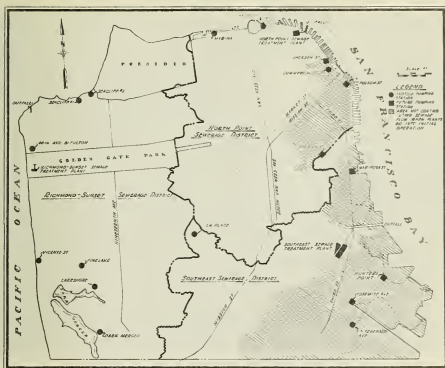
During the fiscal year, all major units were completed except the Administration Building. It is expected that the plant will be ready for the required 30-day test about the end of September 1951. The percentage of completion increased from 63½% on July 1, 1950 to 96% on July 1, 1951. The work remaining includes inside finishing in the Administration Building, completion of the retaining wall along the south property line, several walls and fences, street and yard paving, landscaping and remaining painting and cleanup. During the year 14,000 cubic yards of concrete were poured.

The contract for construction of the plant was awarded to M & K Corp., Fred J. Early, Jr. Co., Stolte, Inc., and Haas & Rothschild, Joint Venturers, on November 28, 1948 for \$8,289,525. (Annual Report 1948-1949, Page 38).

NORTH POINT SLUDGE TREATMENT PLANT

The percentage of completion on the contract increased from 36.7% as of July 1, 1950 to 97% as of July 1, 1951. During the fiscal year all the structural work was completed on all the buildings and most of the equipment and piping was installed. About 6,500 cubic yards of concrete were poured during the year. The work still to be done includes some paving, landscaping, spur track installation, painting and final cleanup. The plant should be ready for testing with sludge pumped from the North Point Sewage Treatment Plant in October, 1951.

The contract for construction was awarded to MacDonald Young & Nelson Co. Inc., and Morrison-Knudsen Co. Inc., Joint Venturers, on August 26, 1949 for \$4,486,000.



SEWAGE DISPOSAL SYSTEM

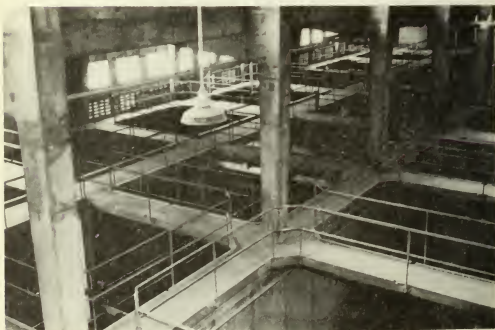
Showing Districts, Pumping Stations and Treatment Plants



NORTH POINT SEWAGE TREATMENT PLANT
Sedimentation and Post Chlorination Building



NORTH POINT SEWAGE TREATMENT PLANT
Main Pump Room in Administration Building



Channels in Preaeration and
Sedimentation Building No. 2

An outstanding feature of the plant is a concrete chimney 200 feet high for discharge of exhaust gases from the drier units and air from the ventilation systems. The chimney consists of two rings, the outer one having an outside diameter of 19'6" at the bottom and 12'0" at the top. The inner ring has an outside diameter of 13'8" at the bottom and 7'0" at the top. The structure rests on an octagonal concrete foundation 39'6" wide supported on piles. An outside ladder and safety cage with platforms at 30' intervals extends to the top. Construction was started first on the outer chimney using steel forms 8' high with concrete pours in 7½' lifts. The inner chimney was then constructed using 4' steel forms. The schedule called for one pour a day. Material and men were lifted by a special electric hoist as required by the State Safety Engineer.

SOUTHEAST SEWAGE TREATMENT PLANT

As of July 1, 1951 the plant was 98% completed compared with 22.1% on July 1, 1950. Construction work started on March 13, 1950 under a contract awarded to the Walsh Construction Co., Bates & Rogers Construction Corp., and J.H. Pomeroy & Co. Inc., Joint Venturers, for \$2,132,118.

The work remaining to be done consists of the installation of minor construction items, some equipment delayed in delivery, installation of a railroad spur, chlorine storage tank piping, painting and cleanup. The plant will go into operation when the influent and effluent sewers now being constructed are completed, probably in January, 1952.

A contract for the effluent sewer was awarded on June 20, 1951 but the start of work was deferred pending permission from the National Production Authority.

INTERCEPTING AND COLLECTING SYSTEMS

The influent and effluent sewers at North Point were 96% complete at the end of the year and will be ready for use when the treatment plant is finished. The influent sewers will divert to the plant the entire flow of the Marina district sewer and the North Point main, which serves the major part of the business and residential areas east of Twin Peaks and north of Islais Creek. Additional intercepting sewers and two pumping stations will be required in the commercial and financial districts bordering the bay to divert to the North Point plant the flow of several sewers now discharging directly into shore waters. The cost of the required additional works is estimated at \$2,590,000.



SLUDGE TREATMENT PLANT
Receiving and Thickening Building and Dryer Building



GENERAL VIEW
SOUTHEAST SEWAGE TREATMENT PLANT

The interception of sewage flows in the Southeast district and diversion to the Southeast Treatment Plant will require the construction of diversion structures, sewers, tunnels and pumping stations as described on page 29 of the 1949-1950 Annual Report. Minor changes in location and design have been made since that time. The Hunter's Point Tunnel has been relocated, requiring additional length but avoiding serious right-of-way difficulties. Test borings have been started for both the Hunter's Point Tunnel and the Candlestick Hill Tunnel to develop information needed for the preparation of plans and specifications for construction. Two contracts involving intercepting sewers near Islais Creek have been awarded and other units are being designed. It is estimated that the cost of all the remaining work at present prices will be about \$5,200,000.

SEWER CONSTRUCTION

Nine sewer construction contracts were awarded during the year as listed in Tables D-1 and D-2 of Appendix I, two of them covering units of the Southeast collecting system. The aggregate contract price was \$1,222,097.48. A number of sewer plans were prepared for incorporation in other types of contracts under the jurisdiction of this department or under the jurisdiction of the Municipal Railway or the State of California.

LAKE STREET SEWER SYSTEM

The outlet of the system was completed by a further 200 foot extension of the 7-ft. diameter pipe and the addition of a reinforced concrete outlet structure on the beach. The system was also extended 3000 feet eastward along Geary Boulevard from Arguello Street to Wood Street. The new sewer was located along the south side of the boulevard, the old sewer in the center of the street being left in service.

LAKE MERCED SYSTEM

The last units of this storm drainage system were completed during the year. As described in some detail on page 14 of the 1944-45 Annual Report, the system includes reinforced concrete sewers, two tunnels, a pile-supported lake crossing and an outlet structure at the ocean beach. The work completed last year included the tunnel under the Parkmerced housing project (Sec. B) and the sewer along Stanley Drive westerly from Junipero Serra Boulevard to the tunnel outlet (Sec. E).

SEWER ENLARGEMENTS

Work was started on the 17th Avenue sewer between Lake Street and Geary Blvd. which will relieve a serious flooding condition which has occurred at the Geary intersection for many years. The Phelan Avenue sewer enlargement was extended along Ocean Avenue and also along Judson Avenue.

Many complaints of flooding were received following the unusually heavy storms of October 25, 26, and 29, 1950. The most seriously affected areas were along Springfield Drive in the Lakeside district and on California Street adjoining the recently developed Laurel Heights subdivision. Sewer enlargements are being planned to provide additional capacity at these locations.

SEWERS INCLUDED IN STREET CONSTRUCTION

Sewers were designed for incorporation in streets and miscellaneous contracts at the following locations:

Oak and Broderick Street intersection (Track removal contract)

Ocean Avenue: Victoria Street to Manor Drive (Public Utility

Commission contract for track reconstruction)

Woodside Avenue: Idora Avenue to Laguna Honda Blvd. (Widening)

Stanley Drive Underpass

Bayshore Blvd.: Marin Street to Waterloo St. (Reconstruction)

Monterey Blvd.: Ridgewood St. to San Anselmo Ave. (Widening)

State Route No. 56 through Golden Gate Park

Bryant Street Viaduct

Farmers' Market to Alemany Boulevard



OAK STREET SEWER

SEWER PLANS AND ASSISTANCE FOR OTHER DEPARTMENTS AND AGENCIES

Plans were completed for the 'Lake Merced School Site Sewer' for which a contract was awarded by the Standard Building Co. This sewer serves, among other purposes, as an outlet for a portion of the Stonestown subdivision.

Plans for several proposed schools of the School Department were reviewed for required sewer service and for interference with existing sewers, in particular in regard to the proposed Sunset School in the vicinity of 38th Ave. and Pacheco Street.

The Redevelopment Agency's plans for Diamond Heights were reviewed and suggestions offered as to sewer needs. The Agency was also advised as to existing sewers and future reconstruction required in their redevelopment area west of Van Ness Avenue between Geary and Eddy Streets.

State plans for sewer construction in connection with the Bayshore Freeway were reviewed and checked for conformance with the City requirements. Plans for future sewers in the 13th Street widening project were prepared and sent to the State, the sewers being so located as to avoid the footings of the proposed viaduct.

FUTURE SEWER CONSTRUCTION

A general review of the sewer enlargements, replacements and extensions which will be needed in the foreseeable future was made as of the end of the fiscal year. Some of the new sewers needed are those required in connection with the new sewage treatment plants as previously mentioned. Others are enlargements which have recently been found to be necessary to avoid flooding of streets and private property and extensions which will be required when new lands are subdivided and additional tide flats are reclaimed along the bay shore. The remainder is largely sewers which were covered by the 1944 Sewer Bond Issue. A summary of the cost by principal categories is shown in the following table:

Sewer Construction Program

North Point collecting system	\$ 2,590,000
Southeast collecting system	5,200,000
Extensions and enlargements in 1944 program	1,970,000
Extensions along shore line	1,985,000
Extensions for new developments	930,000
Enlargements to provide capacity	3,270,000
Replacements of defective sewers	1,495,000
Repair of existing sewers	100,000
Total Estimated Cost	\$17,540,000

STREET AND HIGHWAY IMPROVEMENTS - CITY FINANCED

During the 1950-1951 fiscal year, 23 street and highway improvement contracts were awarded totaling \$2,409,504.25. They ranged in amount from \$750 for razing a building to clear right-of-way for the 13th Street widening project, to \$445,881 for the construction of the Stanley Drive Underpass at Junipero Serra Boulevard. They included the widening and channelizing of main traffic routes, removal of abandoned streetcar tracks, construction of two major grade separation structures, several street reconstruction projects and resurfacing of old pavements. Financing of these contracts was provided mainly from bond proceeds and gas tax funds. The various contracts are listed in Appendix I, Tables A, B-3, B-4 and E-2.

HIGHWAY IMPROVEMENT PROJECTS

Five highway improvement projects were started during the year, three of which deserve special comment.

Junipero Serra Boulevard Channelization

The increase in traffic along and across the wide roadway of Junipero Serra Boulevard has for some time called for additional safety measures. For this purpose a channelization project was undertaken providing for the construction of a 14-foot medial divider with appurtenant safety lighting and traffic signals in the section running south from Ocean Avenue to 19th Avenue. This work, financed with funds remaining from the 1927 Boulevard Bond Issue, was completed in May 1951 at a cost of \$87,000. The remaining portion of the boulevard south of 19th Avenue will be channelized in conjunction with the Stanley Drive Underpass which is now under construction.

Bay Shore Boulevard

At an estimated cost of \$114,000, financed jointly from bond and State Highway Gas Tax funds, a contract for the reconstruction of Bay Shore Boulevard from Marin Street to Waterloo Street was awarded on March 2, 1951. The work entails the removal of abandoned street car tracks, raising of subsided areas to grade, construction of a medial divider and general rehabilitation of the pavement. It is expected that the project will be completed in November 1951.



BAY SHORE BOULEVARD
Track Removal



EL CAMINO DEL MAR

El Camino Del Mar

For the past 10 years one of San Francisco's most scenic drives, El Camino Del Mar through Lincoln Park, was impassable because of extensive earth slides. Subsurface exploration and geological studies were undertaken after the war and a plan of reconstruction developed which involved a drainage system to dry up the surface of the underlying serpentine rock and a realignment of the roadway so as to place it on stable ground to the maximum possible extent. In July 1950 a contract was awarded to put this plan into effect and during June of the following year the beautiful vistas of the Golden Gate and the Pacific were once again open to the motoring sightseer through the reopening of the long closed section of 'The Road of the Sea'.

STANLEY DRIVE UNDERPASS

This structure comprises the main feature of a project designed to separate the grades of Junipero Serra Boulevard and the proposed Stanley Drive Parkway. It is designed as a double rigid-frame reinforced concrete bridge on a concrete pile foundation. Although this type of structure entails the use of a greater amount of concrete than certain other types, the disadvantage is offset by a simplification of construction and a considerably less overall height requirement. Colored concrete, of the type successfully employed in the Alemany Overpass at Junipero Serra Boulevard, will be used in the structure. The contract for the overpass and the cloverleaf connections between the two highways was awarded in November 1950. It is expected to be completed early in 1952 at an estimated cost of approximately \$446,000.

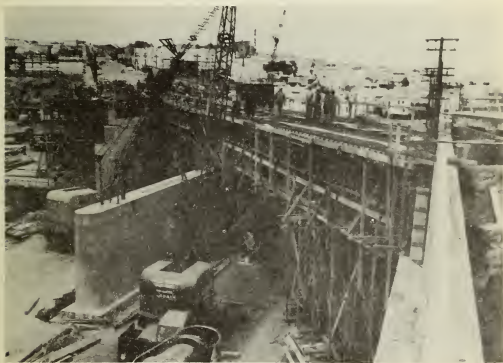
MISSION VIADUCT

Reconstruction of the Mission Street Viaduct over Alemany Boulevard is now under way at a contract price of \$348,218. The original structure, constructed in 1912 for the Ocean Shore Railroad, was supported on three piers so placed that one falls in the center of each roadway of Alemany Boulevard, and traffic was restricted to two lanes in each direction. The tremendous hazard created by these piers in a highway elsewhere accommodating six lanes, will be eliminated when the new project is completed in October 1951.

The new viaduct is a reinforced concrete continuous girder, two-span, skew bridge, divided longitudinally into three sections. The center section provides a track bed, a feature incorporated prior to the decision to abandon streetcars on Mission Street, and is preserved for possible future use.



STANLEY DRIVE UNDERPASS



MISSION STREET VIADUCT

The approaches to the original viaduct were placed on earth fill retained between vertical side walls, which were tied together by transverse walls designed as vertical slabs. Maximum use was made of these existing approaches by joining them to new structure. The problem of design of the new abutments was quite complex due to the excessive skew and the necessity of incorporating the existing side walls in such a manner that they would continue to function in the manner originally intended. The design cost, however, was more than offset by the construction economies resulting from the retention of the original construction.

BROADWAY TUNNEL

Work on the Broadway Tunnel contract, awarded in February 1950, was continued during the year and was estimated to be 31 percent complete on June 30, 1951. The approach cuts and retaining walls at both ends were practically completed including the bridges at Mason Street and Hyde Street. The East ventilation building was completed and the West ventilation building was well under way. Progress made on the two tunnels, 1365 feet long between ventilation buildings, was as follows:

North Tunnel - from east portal:

Full section excavated and supported	178 feet
Concrete invert poured	88 feet
Concrete arch and sides poured	44 feet
North footing drift excavated	502 feet
South ' ' '	591 feet
Top drift, excavated	179 feet

South Tunnel - from east portal:

South footing drift excavated	911 feet
-------------------------------	----------

North Tunnel - from west portal:

North footing drift excavated	76 feet
South footing drift '	67 feet

Construction work was considerably behind schedule, partly due to the Contractor's changes in tunneling procedures and partly due to changes in design ordered by the City. Because of the nature of the ground disclosed by the approach cut excavations, it became necessary to thicken the walls of the ventilation buildings, widen the footings of the approach retaining walls, provide transverse struts and additional drainage in the approach cuts, bring in imported material for back-filling, drive piles for the Mason Street bridge and place some of the foundations at greater depths. These changes, which could not be foreseen when the original plans were drawn, have caused delay in completing several phases of the project and have resulted in substantial additional cost to the City.



BROADWAY TUNNEL
East Ventilating Building



Lining Form - North Tunnel
Bulk Headed for Concrete

STREET IMPROVEMENT PROJECTS

Between July 1, 1950 and June 30, 1951, nine contracts aggregating \$149,371 were awarded for various types of street improvements. These contracts included initial streetwork in front of various pieces of city-owned property, reconstruction of several blocks of outmoded brick pavement, resurfacing of 5.37 miles of various city streets, the widening of 24th Street between Mission Street and South Van Ness Avenue by reducing the width of sidewalks, and the reconstruction of Parker Avenue between Anza and Turk Streets.

Parker Avenue

In May of 1951 a \$22,000 contract was awarded for the reconstruction of Parker Avenue between Anza and Turk Streets. This improvement had been deferred for some time pending completion of an extensive ground stabilization project which was started shortly after the original street was destroyed by a major landslide on the westerly slope of Lone Mountain in December 1935. Dewatering of the slide material by a system of drainage wells and conduits has effectively stopped the earth movement and it is anticipated that Parker Avenue will be reopened to traffic in October 1951.

TRACK REMOVAL AND STREET RECONSTRUCTION

By June 30, 1951, 60.77 miles of streets out of a contemplated total of 101.26 miles had been improved by removal of abandoned street car tracks and resurfacing of pavement or were being so improved at the time. An accompanying map shows the track removal work completed and awarded up to the end of the year.

The total cost of the work completed and under way will be about \$6,250,893, which is 53% of the original estimate. For this sum, about 60% of the total street mileage will be completed, indicating that costs on the average are well under the funds provided.

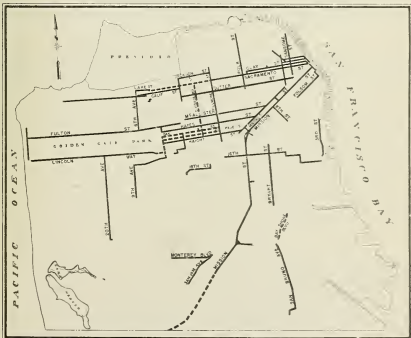
During the fiscal year five contracts were awarded aggregating 10.35 miles in length and \$987,332 in cost. The individual contracts are listed in Table B-4 of Appendix I.

PLANS FOR FUTURE WORK

Plans for a number of street and highway improvement projects have been completed or are nearing completion so that several will

be under contract early in the coming fiscal year. The more important ones, in the approximate order in which they will be undertaken, are shown below together with estimated costs:

Ocean Ave. from Junipero Serra Blvd. to Phelan Ave.:	
Track and street reconstruction and sewer replacement. A joint project in cooperation with the Municipal Railway. Estimated cost to Department of Public Works	\$ 213,988
O'Farrell, Post and Larkin Streets:	
Track removal	245,024
Second Street - Track removal	123,000
Golden Gate Park Crossover Road -	
Reconstruction - 19th Avenue and Lincoln Way to Fulton Street and Park Presidio Boulevard	186,000
Monterey Boulevard - Widening	317,283
Sloat Boulevard - Widen Roadways	250,000
Bryant Street Viaduct - Second to Beal St.	271,200
Guerrero Street and San Jose Ave. - Widening	200,000
Total	\$ 1,806,495



TRACK REMOVAL PROGRAM
as of June 30, 1951
Solid lines - Work completed
Dash lines - Work under way

STREET IMPROVEMENTS FINANCED BY PROPERTY OWNERS

All street construction financed in whole or in part by the fronting property owners for which permits were issued or contracts were awarded during the fiscal year ending June 30, 1951 and also those which were authorized but not completed in the previous fiscal year are listed in detail in Appendix I, Table B-1 and B-2. Table B-1 covers street improvement projects performed under contracts negotiated directly between the property owners and a contractor, the City's only function being to grant permits, furnish the plans and inspect the construction work. Table B-2 covers the same class of work as in Table B-1 except that the contract is awarded by the City and the cost assessed against the property owners. In cases where the assessed value is very low, City aid is extended.

The number of permits for private contracts issued in the past year was 44, which is 9 more than in the previous year. The cost involved was over twice that of the previous year, due to several large subdivisions being improved.

The number of contracts awarded for work done under assessment proceedings was 26 which happens to be the same as in the preceding year but the cost involved was about 12% greater. One contract provided for the construction of 15,402.03 square feet of new sidewalk.

The following tabulations indicate the volume of work carried on during the year in connection with street improvement procedures under the San Francisco Street Improvement Ordinance of 1934.

Assessments and Bonds

Assessments issued for cost of street work	25
Cost of street improvements covered by assessments issued	\$172,299.99
Receipts for bond payments issued	57
Amount of bond payments collected	\$5,589.91

Street Work Proceedings

Resolutions of Intention passed	34
Street Improvement Projects Recommended to the Board of Supervisors	31
Notices of Resolution of Intention mailed	476
Ordinances ordering performance of street improvements passed	24
Notices of Street Improvement posted	313

Proposals for street improvements published	28
Awards of Contract for street improvements	26
Notices of Recordation posted	261
Notices of Recordation mailed	406
Private Contracts authorized by permit	44

The total length of improved streets and highways in the City on July 1, 1951, was 793.20 miles, distributed as follows:

State Highways	30.64 miles
Major Streets	182.28
Other Streets	580.28
Total	793.20

STREET DEDICATIONS AND CHANGES

Numerous actions taken by the City during the year with reference to subdivisions, street grades, sidewalk widths and street closings were based on investigations and recommendations of the Bureau of Engineering and in many cases involved preparation of specific descriptions by the Surveys and Mapping Division of the Bureau.

SUBDIVISION MAPS

The following tentative subdivision maps were received and reported upon.

Midtown Terrace Nos. 1 and 2
Twin View Terrace
Parkmerced Resubdivision
McLaren Heights

Four subdivision maps were approved by the City Engineer and the Director of Public Works and filed in the Recorder's office as follows:

Lakeshore Park Subdivision No. 4
O'Shaughnessy Terrace
Midtown Terrace No. 1
Sherwood Heights

STREET OPENINGS

Maps were approved and recorded providing for the opening and widening of streets as follows:

Gough St.	Market St. to Otis and McCoppin Sts.	- opening
Geneva Ave.	Alemanly Blvd. to Mission St.	- widening
Marin St.	Indiana St. to Tennessee St.	- opening
Mullen Ave.	Peralta St. to Franconia St.	- widening

STREET GRADES CHANGED

Official street grades were changed on the following streets:

Bowdoin Street	Olmstead St. to Harkness St.
Dartmouth Street	Olmstead St. to Mansell St.
Lansing Street	First St. to 320' SWly.
Dartmouth Street	Woolsey St. to Dwight St.
Wilde Avenue	Delta St. to Alberta St.
Ervin Street	Wilde Ave. to 350' Sly.

STREET GRADES ESTABLISHED

New grades were established on the following streets:

Burnett Avenue	Hopkins Ave. to 720 ft. Nly. of Dixie Alley
Hopkins Avenue	Burnett Ave. to Corbett Ave.

SIDEWALK WIDTHS CHANGED

Changes in official sidewalk widths were ordered by the Board of Supervisors as follows:

24th Street	So. Van Ness Ave. to Mission St.
Sargent Street	Victoria St. to Vernon St.
15th Avenue	Lake St. to Nly. Termination
Quint Street	Evans Ave. to McKinnon Ave.

STREETS VACATED

The following streets were abandoned between the limits stated:

Moreland Street	East of Farnum Street
41st Avenue	Vicente St. to Wawona St.
Felix Avenue	In Parkmerced subdivision
Vega Street	Masonic Ave. to Nido Ave.
Locksley Avenue	East of 6th Avenue
Canal Street	West of Congdon Street
20th Avenue	Eucalyptus Drive to Monte Vista Ave.
Tranquilo Drive	20th Avenue Wly.
Ellis Street	West of Anza Vista Ave.
Minnesota Street	South of Army Street
Athens Street and Valmar Terrace	Portions
Esmeralda Avenue	Peralta Ave. to Franconia St.
Marin Street	Moffitt St. to Poppy Lane
Shakespeare Street	East of Head Street
Pioche Street	Cambridge St. to Silver Ave.
Portion Geary Blvd.	42nd Ave. to 43rd Ave.
Georgia Street	Marin Street to 25th St.
Louisiana Street	Marin Street to 26th St.
Delaware Street	Marin Street to 26th St.

TRAFFIC ENGINEERING

TRAFFIC SIGNAL INSTALLATIONS

Contracts were let for the signalization of 41 intersections, 24 of them traffic-actuated and 17 fixed-time. At the close of the year 433 intersections were signalized, 285 with three-light signals and 148 with the old Wiley type. Locations of the three-light signals are shown on an accompanying map.

San Francisco last year saw several 'firsts' in traffic control devices. Neon 'No Left Turn' signs on Lombard Street, which are illuminated by time clock during peak periods only, proved very effective. The intersection of Third Street and Arthur Avenue adjacent to the Islais Creek bridge was provided with the most complicated signal system yet installed. In addition to the normal two-phase traffic-actuated operation, it permits the bridge operator, the Fire Department, or the railroad to preempt the signals in order to clear the street area from the bridge to Arthur Avenue. Another 'first' was the use of fixed-time controllers with push buttons for pedestrian. These signals normally flash but a pedestrian may preempt a fixed-time cycle to cross the major artery in safety.

CHANNELIZATION

Isolated channelization projects were completed at the intersections of Fillmore and Bay, Market and Bush, Market and Sutter, 48th Avenue and Point Lobos, Portola and Kensington and Portola and Clipper.

Extensive use was made of paint and raised bar channelization during the past year. Notable among the intersections so treated were the Pine and Bush Street crossings of Van Ness Avenue where left turn lanes were marked out. This project was an experiment to determine whether or not the future island for Van Ness Avenue should be made wide enough to afford left turn havens. The scheme proved effective and the State Highway Department has approved a permanent 12-foot island with left turn lanes at certain crossings.

TRAFFIC SIGNS

New traffic signs installed during the year totaled approximately 3200. All were supplied, installed and maintained by the California State Automobile Association under a continuing contract with the Department of Public Works. The cost, paid from gas tax funds, amounted to about \$28,000, of which about \$11,000 represents the cost of the enlarged type 'tow-away' signs.



THREE LIGHT TRAFFIC SIGNAL INSTALLATIONS

Open Circles - Awarded 1950-1951

Solid Circles - Awarded Previously



PARKING METER ZONES

Solid Line - Meters Installed

Dash Line - Meters Authorized but not Installed

A very significant jump in the use of stop signs occurred during the year. The Board of Supervisors on the recommendation of the Police Commission passed resolutions during the year providing for placement of 182 new stop signs on city streets. This number is 225% of the previous year's total, 179% of the average for the last four years and represents an increase in one year of 8.25% in the total number of stop signs.

STREET SIGNS

As of June 30, 1951 the total number of new type street signs installed was 4,950 and the cost to date was about \$195,000. Late in the year a contract for installation of the new signs in the area generally south of Market Street and north of Army Street was awarded. This contract, covering approximately 1,122 intersections, will complete the re-signing of the city streets, with the exception of alleys and recently developed subdivisions.

PARKING METERS

On July 1, 1951 the budget for parking meter installations, meter changes and maintenance of meter stalls, was transferred from the Department of Finance and Records to the Department of Public Works. This will make possible the development of new methods of coordinating the inspection of installations and checking of materials received.

During the past year 1,602 new meters were installed in three new zones and five revised zones, bringing the total number of installations to 9,927 and the net number in operation on June 30, 1951 to 9,804. About 175 meters were relocated, 123 meters were removed due to authorization of bus zones, drop curbs, yellow zones etc., and 94 new installations were made where additional parking stalls became available, making a total of 392 maintenance changes in this period.

TRAFFIC STRIPING

During the fiscal year 179.5 miles of streets were striped for traffic, and 1953 intersections were painted with cross walks for pedestrians. The quantities of work performed by the Bureau of Building Repair under supervision of the Bureau of Engineering were as follows:

Traffic stripes painted	326.4 miles	
Pedestrian cross walks		
(12-in. stripes)	731,400	lin. ft.
Lettered signs on pavement	7,980	
Bus stop stalls	1,303	

This work was performed at a total cost of \$123,033.99. The cost of painting the 1,303 bus stop stalls was \$13,450 which was shared equally by the Municipal Railway and the Department of Public Works. The cost of painting parking meter stalls, which is not included in the above total, was approximately \$8,300.

TRAFFIC ROUTING

Greater emphasis was given to the planning of protection for traffic and pedestrians and to expediting movement of traffic in the vicinity of City construction projects during the year. Some of the means employed in this program were advance publicity, explanatory handbills, special traffic striping, more complete signing and special detours and routings of traffic, all coordinated with the contractor's work as well as with police control where necessary.

The most extensive routing job in actual operation during the year was in connection with the reconstruction of the Mission Street Viaduct. A handbill was delivered to each resident along the detour routes explaining the purpose and requesting their cooperation in keeping congestion to a minimum by refraining from parking during the peak hours of traffic flow. Such fine cooperation was received that it was not felt necessary to obtain legislation and install signs to prohibit parking. Similar good results were obtained through the use of handbills on two other projects.

OFF-STREET PARKING STUDIES

The Bureau of Engineering completed four parking studies for the San Francisco Parking Authority and is currently engaged in one other. After studying reports submitted by the Bureau, the Parking Authority approved construction of a 1000 car garage at St. Mary's Square, a 1500 car garage under the Civic Center Plaza and a 250 car parking lot in the Mission District, and decided against the building of a parking lot in the West Portal shopping district. Currently a study of parking needs in the Central Market Street area is being made.

TRAFFIC PLANNING

In conjunction with the Department of City Planning, extensive planning work was done on the following projects:

1. Traffic and pedestrian control measures at the Southern Pacific Railroad Depot at Third and Townsend Streets

2. One-way streets in the Metropolitan Traffic District. The completed plan has been approved by the Board of Supervisors and now awaits changes in Municipal Railway overhead wiring before being put into operation.
3. Reversible one-way streets. Studies conducted on Bush and Pine Streets indicated that those streets should not be put under reversible one-way operation.

TRANSIT STUDIES

Closer coordination of activities between the Municipal Railway and the Department of Public Works has developed in the last year than ever before. Interchange of preliminary construction plans have permitted utilization of the same standards for support of trolley wires, traffic signals and safety lighting. Early conferences on channelization have assured proper operating radii for transit coaches and full utilization of traffic islands for trolley pole installations thereby shortening required span wires.

Special traffic studies initiated by railway officials were as follows: Traffic signals for cable car control at California and Powell, Laguna Honda Station facilities, Market and Clayton switchback, Phelan Avenue terminal. Special transit studies initiated by street designers were made at: Junipero Serra and Ocean, Sutter Street loop, St. Francis Circle, Mission and Otis Streets, Farmers' Market.

TRAFFIC COUNTS

Traffic counts were taken on more than 200 city streets, the great majority being by automatic recording counters. The results have had immediate use in signal timing, in channelization design and in determining the need for additional regulatory measures and also provide valuable information regarding traffic growth and changes in traffic pattern. Examples are presented on the accompanying diagrams which show the increase in vehicular traffic entering and leaving the Metropolitan Traffic District between 1947 and 1951 and the changes in traffic pattern caused by street car track removal and progressive signal timing.

RESEARCH PROJECTS

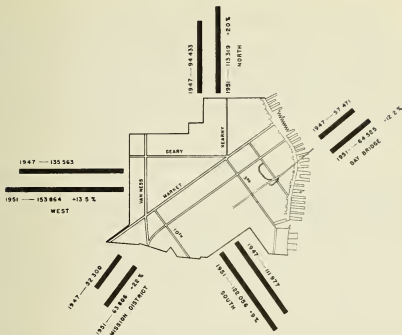
In cooperation with the University of California, the Bureau

of Engineering is currently engaged in two research projects.

One project involves testing the efficiency (by means of delay studies) of semi-actuated, full-actuated, volume density, and fixed-time interconnected signals under varying traffic conditions. The tests have been undertaken at the intersections of First and Clementina Streets, Santa Rosa Avenue and Alemany Boulevard, and Ocean Avenue and Alemany Boulevard. The results of this study, which will be published by the Highway Research Board, may lead to the establishment of warrants for the use of each type of signal control.

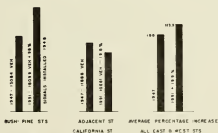
The other cooperative project is a 'before-and-after' delay study of two intersections that are first controlled by four way 'STOP' signs and later by traffic signals. The intersections being studied are 24th and Guerrero Streets and Fulton Street and Masonic Avenue.

A 'before-and-after' speed and delay study made last year during the morning peak-hour at the intersection of San Jose Avenue and Randall Street showed a very large economic saving due to the improvement. In the 'before' study, with a one-way volume of 1850 v.p.h. in the 7 - 8 A.M. period, the average vehicle speed on San Jose Avenue was 6.7 MPH. After channelizing and resignalizing the intersection, despite an increase of traffic volume to 2500 v.p.h., the average speed on San Jose Avenue increased to 18 MPH. The time and gasoline saved by motorists traveling on San Jose in the 7 - 8 A.M. period alone, is estimated to be \$45,000 per year. The cost of the improvement was about \$31,000.

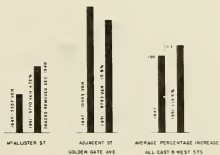


INCREASE IN DOWNTOWN TRAFFIC 1947-1951

Vehicles entering and leaving Metropolitan Traffic District between 7 A.M. and 7 P.M.



EFFECT OF SIGNAL SYSTEM ON TRAFFIC PATTERN



EFFECT OF TRACK REMOVAL ON TRAFFIC PATTERN

INDUCED TRAFFIC PATTERN CHANGES

STREET AND SIDEWALK PERMITS AND INSPECTIONS

The following tabulations indicate the variety of miscellaneous inspections made during the year and the numbers and types of various kinds of permits approved.

Utility Excavation Charges and Miscellaneous Permit Fees

Utility Excavations	Number Permits	Fees
Pacific Gas & Electric Co.	5,379	\$ 8,068.50
Pacific Telephone & Telegraph Co.	345	517.50
S.F. Water Department	4,743	7,114.50
Street Lighting, Trolley Electrification, Traffic Signals, etc	84	126.00
Total	10,551	\$15,826.50

Miscellaneous Permits

Curb Lowerings and Sidewalk Tanks	758	\$ 1,137.00
House Moving	91	1,820.00
Street Spaces	1,211	31,052.21
Total	2,060	\$34,009.21

Special Permits

Blasting	5	--
Flower Stands	44	1,416.00
Sidewalks	17	--
Total	66	\$ 1,416.00

TOTALS	12,677	\$51,251.71
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Notices, Permits and Investigations

	Number
Lot frontages inspected for sidewalk conditions	18,389
Curb lowering permits and inspections	881
Notices to construct or repair sidewalks	4,337
Notices to remove obstructions, oil etc.	377
Notices to replace side sewer covers	395
Street space permits and inspections	1,981
Sidewalk tank excavation permits and inspections	144
House moving permits and inspections	99
Defects in pavements reported (written)	2,676
Damaged signs reported	191

Excavation permits approved	11,551
Excavation repaving inspected	8,210
State Encroachment Permits obtained	192
Asphalt samples for analysis	50
Claims investigations and inspections	248
Special investigations and permits (blasting, etc.)	967
Personal and telephone calls of complaints	
or for information	10,226
Citations	9

DAMAGE CLAIMS

The Bureau investigated 185 damage claims filed against the Department of Public Works during the fiscal year 1950-1951 based on street and sidewalk accidents. Seventy-nine were found to be the responsibility of contractors or privately or publicly owned utilities. The remainder included 54 claims alleging defective pavements and 52 alleging defective sidewalks. Under present law, the claims would be the responsibility of the Department of Public Works if negligence in making repairs could be shown. In each of these cases a full report was made for the City Attorney, accompanied by photographs when appropriate.

The annual tabulation of all claims involving the Department of Public Works, closed in October 1950, is in preparation. This shows all claims or suits filed or active for the five-year period ending June 30, 1950 and is prepared for the information of the Director of Public Works and the City Attorney. It covers personal injury and property damage claims, of the type mentioned above, and also damage claims resulting from accidents in which Department of Public Works vehicles and equipment were involved, as well as accidents at street cave-ins caused by broken sewers.

A preliminary review of the claims and suits tabulated shows about 410 claims filed in the last five-year period and about 250 suits and claims still pending at the end of that period. This was a slight increase over the number reported a year ago.

The review also shows that 44 suits asking for damages aggregating \$384,274 were settled by the payment of \$31,020.

SURVEYS AND MAPPING

During most of the year, one 2-man and seven 4-man field parties were employed on survey work. Two parties were regularly assigned to the sewage treatment plants under construction. One was engaged continuously on surveys for track removal contracts. The remaining four parties made various land and construction surveys. Survey lines run are segregated by type of survey as follows:

Type of Survey	Miles
Lots	12.5
Sewers	6.4
Cross Sections	29.0
Subsidence	8.7
Monument lines, including 62 monuments	1.9
Topography	8.0
New Streets	3.4
Line and grade for curbs and paving	44.5
Track removal	8.9
Total length of Surveys run	123.3

NUMBER OF SURVEYS

A total of 237 separate surveys were undertaken for the Department of Public Works and other city departments, classified as follows:

Public Improvement Surveys

Public and private contracts	79	
City pay contracts	140	219

Lot Surveys

For Recreation and Park Department	4	
For Fire Department	4	
For San Francisco Unified School District	10	18

Total number of Surveys	237
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Survey fees were received during the year to the total amount of \$10,330.

PRECISE LEVEL SURVEY

On March 1, 1951, a precise level party was organized, and work in this category was resumed after a lapse of a year and eight months, during which time the press of other work prevented its operation. In addition to 1.9 miles of precise levels run to determine subsidence on Jackson Street from the Embarcadero to Sansome Street, precise land circuits were run and bench marks set in the Hundred Vara and Mission districts, as shown below:

District	Bench Marks	Distance-Miles
Hundred Vara	320	9.4
Mission	195	3.5

OFFICE WORK

Thirteen maps of school sites were prepared showing precise boundaries, locations of improvements and utilities, and contours at five-foot intervals.

Computations and preliminary drawings required for the acquisition of property were made on such projects as the widening and extension of Thirteenth Street, improvement of Stanley Drive and numerous other minor projects. Deed descriptions of all property to be acquired by the City for these projects were written.

All tentative subdivision maps submitted were examined and checked for correctness of street widths and grades. Final subdivision maps submitted for filing in the Public Records were checked for correctness of all dimensions of lot lines and exterior boundaries.

To determine the City's interest in the property involved and to check the boundary descriptions, thirty-three actions to quiet title were examined and reports made to the City Attorney's office.

Section 117 of the City Charter requires that appeals from decisions of the City Planning Commission shall be signed by twenty percent of the owners within a radius of 300 feet of the property involved. Fourteen such appeals were checked and reports made to the Clerk of the Board of Supervisors.

POST-WAR STATE AID

Under the two State Aid acts providing financial assistance to local communities for the planning and building of public works, 12 applications were cancelled, two additional applications were filed and substantial reimbursements were received on active applications. The amounts of the several State allocations and the amounts received by the City to June 30, 1951, are shown below:

Act and Purpose	Allocation	Received
Planning Assistance Act (Chap. 47 Stats. of 1944)		
Department of Public Works		
For Plans	\$ 543,722.26	\$ 432,094.48
For Land Purchase	249,621.72	89,474.35
Sub-Total	793,343.98	521,568.83

Recreation Department	\$ 42,767.92	\$ 32,027.92
Reversions to be applied for	1,789.87	
Total for City	\$837,901.77	\$553,596.75
Construction & Employment Act (Chap. 20, Stats. of 1946)		
For Highway Projects (D.P.W.)	398,383.79	398,383.79
For other Projects (D.P.W.)	7,959,078.97	6,012,017.77
Total	\$8,357,462.76	\$6,410,401.56

ACTIVE APPLICATIONS FOR PLANNING FUNDS

During the fiscal year 10 inactive planning applications were cancelled, viz: Nos. 80, 82, 84, 86, 90, 91, 94, 834, 104 and 108. Final payments were received on three applications, Nos. 74, 81 and 110 thus closing them. Two new applications were added. Thus while there were 15 active applications at the end of the previous year, only four were active on June 30, 1951, as follows:

State No.	Project	Plan Cost Total	Plan Cost After July '44	State Share
102	Army, San Jose Ave.			
	Guerrero & Clipper	\$ 55,000	\$ 22,000	\$ 11,000.00
106	13th St.-Market-Bryant	13,200	13,200	6,600.00
1655	Southeast Plant	106,188	106,188	52,593.99
1656	Broadway Tunnel	133,000	133,000	54,633.79
	Total	\$307,388	\$274,388	\$124,827.78

PAYMENTS RECEIVED ON PLANNING APPLICATIONS 1950-1951

State No.	Planning Projects	Amount Rec'd	Date
Sewers			
74	Lake Merced Sewer (Final)	\$ 6,601.22	11- 6-50
81	Lake Street District (Final)	1,250.00	1-29-51
Highways			
110	Mission Street Viaduct (Final)	2,733.50	11-16-50
	Total	\$10,584.72	
	Less Refunds to State:		
91	23rd Street Sewer \$750.00		5-11-51
108	Monterey Boulevard 3,563.50		5-11-51
	Total Refunds	-4,313.50	
	Net Total Reimbursement	\$ 6,271.22	

LAND ACQUISITION - APPLICATIONS

Under Board of Supervisor's Resolution No. 11,105 approved May 2, 1951, request was made for reduction of outstanding Application No. 2013 by \$35,000, leaving the sum of \$214,621.72 for the Army-San Jose-Guerrero Highway Project, covering 67 parcels of land. The \$35,000 was reapplied for by Supervisor's Resolution No. 11,104 to cover three parcels of land on the Thirteenth Street Widening Project and was assigned Application No. 2223 pending formal approval. Under Application No. 2013, the sum of \$89,474.35 was received on August 22, 1947, as a partial payment on purchase of 23 parcels.

APPLICATIONS AND REIMBURSEMENTS - CONSTRUCTION FUNDS - 1950-1951

During the fiscal year two inactive applications for construction fund were cancelled, viz. No. 26 and No. 27. Thus while there were five active applications the previous year, there were but three active applications remaining at the close of the fiscal year. The allocations and partial payments received thereon are as follows:

State No.	Project	Allocation State's Share	Amount Received	Date
547	North Point Plant	\$ 2,138,050.00	\$ 251,545.78	7-28-50
647A	' ' '	819,605.34	518,368.33	2-21-51
648	' ' '			
	Sludge Plant	1,550,000.00	661,037.83	9- 5-50
649	North Point Inf. & Effl. Sewers	300,000.00	221,579.10	6- 8-51
	Total	\$ 4,807,655.34	\$1,652,531.04	

SUMMARY OF STATE AID FUNDS RECEIVED BY DEPARTMENT OF PUBLIC WORKS

The following tables summarize the payments received from the State by the Department of Public Works under the two State Aid Acts to June 30, 1951, from the first payment received on April 11, 1946; the City accounts credited; and the main classes of projects to which construction funds are allotted.

Payments Received From State

Act and Item	1946-50	1950-51	Total
Planning Assistance			
Act Plans	\$ 425,823.26	\$ 6,271.22	\$ 432,094.48
Land Acquisition	89,474.35	-0-	89,474.35
Total Plans & Land	\$ 515,297.61	\$ 6,271.22	\$ 521,568.83

Const. & Employment Act

Highway Projects	\$ 398,383.79	-0-	\$ 398,383.79
Other Projects	4,359,486.73	\$ 1,652,531.04	6,012,017.77
Total Const. etc	\$4,757,870.52	1,652,531.04	\$6,410,401.56
Total - Both Acts	\$5,273,168.13	\$ 1,658,802.26	\$6,931,970.39

City Accounts Credited

City Account	Plans & Land	Construction	
1944 Sewer Bond Fund	\$398,760.01	\$6,012,017.77	\$6,410,777.78
Special Gas Tax Fund	102,959.35		102,959.35
Special Road Improve- ment Fund	11,166.42		11,166.42
Special Highway Trust Fund	8,683.05		8,683.05
General Fund (Islais Ck. Bridge)		398,383.79	398,383.79
TOTAL TO JUNE 30, 1951	\$521,568.83	\$6,410,401.56	\$6,931,970.39

Allocation of Chapter 20 State Funds
To Classes of Construction Projects:

Class of Project	Amount
A Sewage Disposal	\$ 5,476,283.69
B Sewage Pumping Stations	23,494.55
C Main Sewers	2,459,300.73
D Bridges	398,383.79
TOTAL	\$ 8,357,462.76

LABORATORY AND TESTING WORK

The testing laboratory was operated as a part of the Division of Construction to control the quality of materials used on construction projects and particularly to verify asphalt and concrete mixes used on street work and in various structures. In addition many routine tests were made for the Purchaser of Supplies and for various other City departments.

CONCRETE

All concrete cylinders tested continued to break above the specified strengths. Recently most concrete to be poured in thin reinforced sections has been permitted to be placed with slightly higher slump and smaller aggregate than heretofore required, thereby sacrificing high compression strengths in favor of well filled forms and the elimination of rock pockets and eventual patching.

COLORED CONCRETE

Colored concrete was used in the reinforced concrete sheds at the Farmers Market on Alemany Boulevard with pleasing results. As a result of previous experience with colored concrete on the Alemany - Junipero Serra Overpass no trouble was encountered on this job. The colored iron oxides were added to the top of the transit-mix trucks after they were fully loaded at the central mixing plant. By this procedure the possibility of contaminating other jobs served by the same plant was avoided.

SPECIAL CONCRETE TESTS

Several concrete samples taken at Broadway Tunnel from a concrete pour using an air entraining agent as an admixture were tested at 24 hours and showed results slightly under 1000 lbs. per square inch. The concrete used in these tests had a 4-inch slump and 4% entrained air and was being pumped into open forms.

Another set of samples taken later from a pour in the arch section at the east portal of the north tunnel showed 500 lbs. p.s.i. at 24 hours and 1100 lbs p.s.i. at 48 hours. The concrete used in these batches had a 6-inch slump and 4% air entrainment. These tests would more truly represent the actual strength of concrete pumped into the arch forms but the concrete in the mass would probably test higher due to the retained heat of reaction which would accelerate setting.

At the Lake Merced sewer tunnel, the steel forms for the concrete lining were removed within 24 hours after pouring and no failures of concrete in the arch occurred.

ASPHALT AND ASPHALT MATERIALS

The Antioch sand deposits at Antioch, California, are becoming overworked and very erratic in grading. Some of the suppliers from this source have abandoned their pits. New types of sand for use in asphalt mixtures have become essential.

A blend of 50% Antioch and 50% Niles Top sand was tried last year on North Point Street in replacing pavement torn up for construction of the North Point Sewage Treatment Plant. This mix gave a very good closed-surface pavement and worked very well under the roller.

An asphalt mix made up of crushed rock from the 'Macco' quarry at Brisbane with a small percentage of blending sand imported from Millbrae was used on Lake Merced Drive extension at West Lake Village. This mix worked very well and gave an open texture non-skid surface. The State Highway Department is now using these materials on Bayshore Highway.

SUMMARY OF TESTS PERFORMED

A summary of the tests made in the laboratory during the year, together with corresponding figures for the preceding year are shown in the following table:

Laboratory Tests

	1949-50		1950-51	
Chemical & Physical tests				
Public Utilities Commission	35		28	
Department of Public Works	225		314	
Purchaser of Supplies	62		80	
San Francisco Fire Department	60		48	
Recreation and Park Department	10		18	
Bureau of Architecture	18		24	
Bureau of Engineering	50	460	65	577
Paint tests				
Recreation and Park Department	10		4	
Purchaser of Supplies	8		37	
Bureau of Architecture	16		30	
Public Utilities Commission	10		12	
Bureau of Engineering	15	59	12	95
Asphalt and Coal Tar tests				
Corporation Trenches	30		20	
Public Utilities Commission	6		10	
Recreation and Park Department	8		12	
Department of Public Works	60		90	
Bureau of Engineering	80	184	60	192
Concrete tests				
Bureau of Building Inspection	2		6	
Recreation and Park Department	224		166	
Bureau of Architecture	284		524	
Public Utilities Commission	272		636	
Bureau of Engineering	920	1702	676	2008
TOTALS		2405		2872

SERVICES PERFORMED
FOR OTHER BUREAUS AND DEPARTMENTS

The Bureau of Engineering supplied technical services requested by numerous bureaus and departments of the City as summarized below.

FOR BUREAU OF BUILDING INSPECTION

Report on ventilation of proposed Post Office garage.

FOR BUREAU OF SEWER REPAIR

Engineering services for sewage pumping stations.

FOR RECREATION AND PARK COMMISSION

Topographic and boundary surveys of Portola, Bayview and Corona Heights playgrounds.

Supervision of construction of Phelan Beach improvement.

Structural plans for carpenter shop at De Young Museum.

Recommendations as to operation and maintenance of sewage treatment plant in Golden Gate Park.

FOR DEPARTMENT OF PUBLIC HEALTH

Supervision of construction of steel water tank at Laguna Honda Home.

Reports on structural details, ventilation, plumbing and new boiler at San Francisco Hospital.

Advice on operation and maintenance of sewage treatment plant at Hassler Health Farm in San Mateo County.

FOR SHERIFF'S DEPARTMENT

Inspections and tests at regular intervals for control of operation of sewage treatment plant at County Jail No. 2 in San Mateo County.

FOR BOARD OF EDUCATION

Topographic and boundary surveys for 8 school sites.

Establishment of horizontal and vertical controls for aerial survey of McLaren Park.

Study of fire escapes at Sutro and McCoppin Schools.

Supervision of construction of retaining wall at Paul Revere School.

Report on heating, ventilation and plumbing at Ulloa School.

FOR SEALER OF WEIGHTS AND MEASURES

Supervision of construction of first unit of
Farmers Market improvement.

FOR JUVENILE COURT DEPARTMENT

Supervision of construction of sewage treatment
plant at Log Cabin Ranch.

FOR FIRE DEPARTMENT

Topographic and boundary surveys for 2 fire station
sites.

Survey of subsidence of high pressure mains in 50
and 100 vara districts.

Lot and encroachment survey for fire station on
Sanchez Street.

Plans for extensions of high pressure system.

FOR REAL ESTATE DEPARTMENT

Survey of properties in vicinity of Stanley
Drive Underpass.

FOR MUNICIPAL RAILWAY

Recommendations on bus zones, bus routes, terminals
and special signals.

FOR PARKING AUTHORITY

Four reports on parking needs and facilities.

FOR DIRECTOR OF CIVILIAN DEFENSE

Supervision of installation of 5 large and 13 small
air-raid sirens.

FOR JOINT HIGHWAY DISTRICT NO. 10

Plans for traffic signals

FOR STATE DIVISION OF HIGHWAYS

Plans for relocation of sewers and high pressure
water mains in connection with Bayshore Freeway.

LABORATORY TESTS AND EXAMINATIONS

Made for Bureaus and Departments as follows:

Bureau of Architecture	578
Other Bureaus of the Department	410
Recreation and Park Department	200
Public Utilities Commission	686
Purchaser of Supplies	117
Fire Department	48

Total	2039
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FARMERS' MARKET
First Unit of Improvement

GARBAGE DISPOSAL

Since 1932, all garbage and refuse collected in San Francisco, except limited amounts of hotel and restaurant wastes sold to hog raisers, have been disposed of by the sanitary fill method. Two licensed scavenger companies make the collections and haul to the dump and a jointly financed company operates the sanitary fill. The City's only functions are to control collection rates and enforce public health regulations.

SANITARY FILL SITE

The disposal site is located on a tide flat on the shore of San Francisco Bay just south of the City's southerly boundary. The property is owned by the Southern Pacific Company and adjoins the company's Bayshore switching yards for a distance of about 6400 feet. Quarries for cover material are located conveniently at the north and south ends of the fill site.

The present fill is about 5800 feet long measured parallel to the shore line and about 1100 feet wide, giving an area of about 146 acres as of July 1, 1951. The surface is fairly smooth and free from depressions, the elevation varying between 14 feet and 18 feet above high tide. General settlement of recently filled areas is about 2 feet per year.

About 30 acres of the oldest part of the fill surface are occupied by commercial and light industrial buildings. Another 6 acres will shortly be occupied by a terminal building and sorting shed to be used by the Sunset Scavenger Company, the larger of the two collection companies. The new plant will include shops, offices, assembly rooms, sheds to house 112 trucks and a two-story bottle washing building built on a pile foundation.

COLLECTION AND TRANSPORTATION

All garbage and refuse is picked up at back doors in the residential districts once a week by the private scavenger companies. In the down town districts, where large amounts of paper and garbage accumulate, general collections are made three times a week. At the larger hotels collections are made daily. No segregation is required on the part of the householder, but some salvaging is done by the collectors enroute and at a sorting shed near the disposal site. Paper, bottles, rags, metals, etc., are removed before weighing the amount of garbage hauled to the dump.

The amount of paper salvaged is about 120 tons daily. Some of this is hauled by 8 or 10 special paper trucks directly from

the office building district to fiberboard factories and other users of waste paper. Surpluses not readily saleable are hauled to the dump and either burned or placed in the fill. The unsalvaged paper in part accounts for the increase of 60 tons daily in the quantity of garbage handled in 1950 as compared with 1949.

The two scavenging companies now use 125 trucks and average about 270 trips per day. Each truck has a capacity of about 20 cubic yards but after the removal of salvaged materials the load carried to the fill averages about 18 cubic yards. Total daily collections averaged 889 tons in 1950. The scavenger companies operate six days a week or about 312 days a year. Saturday collections are slightly above 60% of normal week day collections.

FILL AND COVER OPERATIONS

The Sanitary Fill Company, which is controlled by the two scavenger companies, handles the fill and cover operation at the fill site through Easley and Brassy, Contractors. The garbage trucks dump their loads at the margin of the fill and a large bulldozer levels it up. Earth and rock is then brought in from the quarry and spread over the garbage in 1½ ft. to 2 ft. layers. Additional layers are placed and covered after several weeks or months of settlement. The average depth of garbage in the filled in area is probably about 35 feet.

Of the total area of 300 acres leased by the Sanitary Fill Company, there remains only about 150 acres available for future fill. Pit and quarry rights now acquired are sufficient to furnish cover material for many years but use of the north quarry is restricted because of wartime housing units which occupy a portion of the area. The south quarry is now being used except in the rainy season, when trucks cannot operate safely because of the high clay content of the soil.

STATISTICS

The quantities and costs, which appear in the following tabulation on a calendar year basis, are based on information furnished by Easley and Brassy, the contracting firm which handles the operation of the fill. They do not include administrative and overhead expenses of the Sanitary Fill Company, which employs the contractor. The Sanitary Fill Company is permitted by franchise to collect 90 cents per ton from the scavenger companies.

SANITARY FILL STATISTICS

Calendar Years 1949 & 1950

	1949	1950
Total Income	\$234,933.98	\$249,516.07
Expenses		
Operations	\$188,230.30	\$190,802.91
Roads & Maintenance	3,512.00	2,956.87
Administration & Inspection	50,811.21	51,261.30
Total Expense	\$242,553.51	\$245,021.08
Garbage & Refuse Handled, Tons		
City of San Francisco	255,640.18 tons	275,268.47 tons
Other Sources	2,959.10 '	1,971.61 '
Total	258,599.28 '	277,240.08 '
Quantity per day, tons (312 days)	830 '	889 '
Cost of disposal per ton	\$ 0.938	\$ 0.918
Cover Material		
Quantity Used, Cu. Yds.	198,350 cu. yds.	201,040 cu. yds.
Cost, Total	\$ 79,013.00	\$ 97,906.80
Cost, per Cu. Yd.	\$ 0.399	\$ 0.487
Cover per Ton of Garbage and Refuse, Cu. Yds.	.767 cu. yds.	.726 ' '
Truckloads of garbage & refuse	77,450	84,500
Average weight per load, tons	3.34 tons	3.28 tons
Estimated Average Weight of Garbage per Cubic Yard		364 lbs.

SEWAGE DISPOSAL SYSTEM

GENERAL DESCRIPTION

San Francisco's sewage disposal system includes three treatment plants which will serve all areas in the city. The Richmond-Sunset plant at the ocean shore has been in operation since 1939. The North Point plant and the Southeast plant are nearing completion. The map in a preceding section shows the location of the three plants and the areas which they serve.

The Southeast plant embraces the facilities which have been under construction as two separate units referred to as the North Point Sludge Treatment Plant and the Southeast Sewage Treatment Plant. When placed in operation they will be under a single superintendent and operating staff. In addition to providing primary sewage treatment for the southeasterly part of the city, the plant will digest, de-water and dehydrate the sludge from both the Southeast and North Point districts and will in addition dehydrate the filter cake produced by the Richmond Sunset plant. To permit this concentration of facilities at one point, the sludge from North Point will be pumped across town and the filter cake from the Richmond-Sunset plant will be hauled by truck.

TREATMENT METHODS AND CAPACITIES

Each plant provides primary treatment for removal of oil, grease, floating material, grit and settleable solids. In all cases the effluent will be chlorinated for bacterial disinfection before being discharged into the ocean or bay. Sand and screenings from the North Point Plant and sand from the Southeast Plant will be hauled by truck to the Sanitary Fill in San Mateo County. At the Richmond Sunset plant, screenings are incinerated and sand is hauled to a city dump.

The plants are designed for the following ultimate flows:

	Flow, mgd.	
	Dry Weather	Wet Weather
Richmond-Sunset Plant	15	45
North Point Plant	65	150
Southeast Plant	26	70

DISPOSAL OF DRIED SLUDGE

Part of the dehydrated sludge, equivalent to the Richmond-Sunset production, will be given to the Recreation and Park Department for use in City parks. The balance, under present plans, will

be sold to a single contractor under formal contract.

A study was undertaken during the past year to determine the best basis for a contract for sale of the dried material for use as a soil conditioner or fertilizer base. Methods of sale in use by other municipalities were investigated and prospective buyers were interviewed. A letter and questionnaire was sent to companies and individuals showing interest in buying the product to find out the conditions under which they would be interested in bidding. This data is being reviewed and a suggested form of contract will be transmitted to the City Purchasing Department, the agency which calls for public bids.

OPERATING PERSONNEL

A total operational force of 100 employees will be required to operate the three plants. Twenty are now employed at the Richmond-Sunset Plant and 80 will be required for the North Point and Southeast Plants as shown below:

	RICHMOND SUNSET	NORTH POINT	SOUTHEAST*
Superintendent	1	1	1
Chemist	1	1	1
Water Chemist	1	2**	3 (1)
Clerk-Stenographer	1	1	1
Chief Operating Engineer	1	1	1
Operating Engineer	6	6	7 (1)
Junior Operating Engineer	5	15	27 (9)
Janitor	-	1	1
Laborer	3	4	5
Truck Driver	1	1	-
	20	33	47

*Numbers shown are totals required for both sewage and sludge treatment facilities; the number required for sewage treatment alone are shown in parentheses.

**One will do bacteriological work for all plants.

Engineering work will be performed by other divisions of the Bureau. Major repairs and maintenance work requiring the services of skilled crafts will be done by other City forces and landscaped areas will be maintained by the Recreation and Park Department.

INITIAL OPERATION OF NEW PLANTS

The new plants will be placed in operation during the coming fiscal year. The North Point plant will operate at nearly full capacity although additional intercepting sewers and pumping stations will be required before all sewage in the tributary area can be diverted to the plant. At the Southeast plant, the sludge treating facilities will be operated at about 55% of maximum capacity and should produce marketable dried sludge at the initial rate of about 5000 tons per year. The sewage treatment facilities, on the other hand, will operate at limited capacity until major intercepting sewers are constructed as previously described in this report.

The Superintendents and Chief Operating Engineers for the two new plants were assigned during the last half of the past fiscal year to observe details of construction, assist the field inspection forces, determine operational procedures and develop training schedules for new employees. They also helped in preparing requisitions for purchase of materials, supplies and equipment not furnished under the construction contracts. The Chemists were employed during May and are being trained at the Richmond-Sunset Plant.

OPERATION OF THE RICHMOND-SUNSET PLANT

Except for the presence of unusual quantities of clay in the sewage during the winter rainy season, plant operation was normal during the year. On several occasions the clay concentration exceeded 3,000 ppm. Generally, the clay was so finely divided that only a relatively small proportion could be removed by sedimentation. For this reason effluent suspended solids were higher than usual during the rainy season and the overall percentage of suspended solids and B.O.D. removals are lower this year than in previous years.

The accompanying tables summarize operation data for the fiscal year and cost of operation for the past five fiscal years. Further details for the current fiscal year can be found in the tables in Appendix IV.

A general description of the major plant units and a listing of regular laboratory testing and plant maintenance schedules will be found in the 1949-50 Annual Report on page 69.

The plant scale test on the effect of direct sludge transfer from primary to secondary digestion without intermediate single-stage elutriation described in the 1949-50 Annual Report on page 74 was completed in November 1950. With the existing piping arrangement, which permits direct transfer only from the bottom of the pri-

mary digester to the secondary digester, the solids loading decreased in the primary digester and increased in the secondary digester with the result that occasionally the secondary digester supernatant was not clear. The following conclusions are based on the test:

- (1) Single-stage elutriation produces clear supernatant more consistently and a somewhat more concentrated sludge, and allows greater loading of the secondary digester.
- (2) There is no detectable difference between the two methods of operation so far as coagulant requirements and filter yield in vacuum filter operation are concerned.

Single-stage elutriation was used during the balance of the fiscal year following the test operation. Sludge for vacuum filtration was withdrawn to two-stage elutriation from the bottom of the secondary digester during the whole of the fiscal year.

The laboratory staff made the following investigations in addition to its regular work:

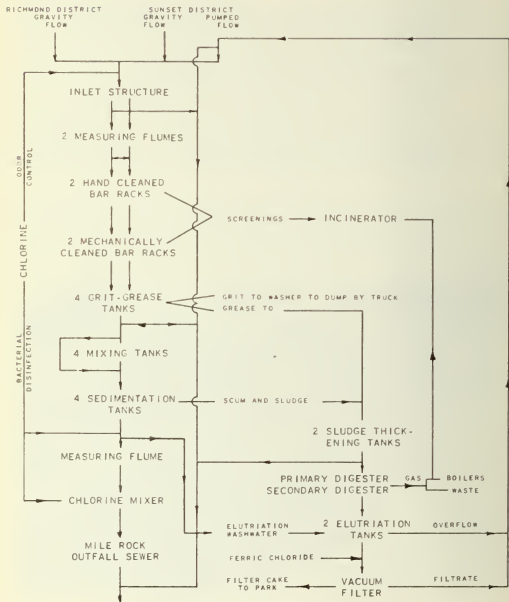
1. Effect on effluent chlorine residual of various methods of adding chlorination solution.
2. Causes of paint failure in the Sedimentation Building during the last fiscal year. It was found that the painted surfaces are wet most of the time with a thin film containing about 4 percent ammonium chloride in solution and having a PH of about 5. The ammonium salt apparently originates from the sewage flowing through the building and dissolves readily in the surface film of water. Studies are being continued to determine whether other factors are contributing to the rapid failure of paint in the building to determine what composition of paint will stand up best under the conditions.
3. Testing of domestic garbage grinder units submitted by manufacturers for conformance with requirements of the applicable City ordinance.
4. Effect on secondary digestion of single-stage elutriation of sludge transferred from primary digestion.
5. Research on methods of analyses in cooperation with the Committee on Standard Methods of the Federation of Sewage Works Associations.

6. Field tests and advisory service on the operation of the activated sludge treatment plants in Golden Gate Park and at County Jail No. 2, and the sewage treatment plant at Hassler Health Home.
7. Bacteriological tests of Bay waters at 23 sampling stations located along the easterly and northerly shore lines, which were started on April 24, 1950 were continued throughout the year. Samples are taken bi-weekly at 10 stations and weekly at 13 stations. The purpose of this program is to measure the existing levels of pollution under varying tidal and seasonal conditions. This information will be used to evaluate the effectiveness of treatment to be provided at the North Point and Southeast Sewage Treatment Plants and to serve as a basis for adjusting future plant operations to meet the varying conditions.



Richmond Sunset Treatment Plant
Main Bldg. & Digesters.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT FLOW DIAGRAM



SUMMARY OF OPERATION

(For details and costs refer to tables in Appendix IV)

Sewage Flows:

Millions of gallons, by gravity (364.5 days)	2,826.2
pumped (305.7 days)	1,509.4
total	4,335.6
Average daily flow, ^a mgd, by gravity	7.8
pumped	4.9
total	12.7

Screenings, cu ft (Sunset Pumping Station not included):

Total	8,610
Per million gallons	1.99
Sand, cu yd: from grit tanks	2,547
from Sunset Pumping Station	1,459
total	4,006
average per million gallons	0.92
Grease, gallons: from grit-grease tanks	319,500
from other units	Not determined
Chlorination, lb: pre	117,450
post	319,800
total	437,250
per million gallons, pre	30
per million gallons, post ^b	90

Sedimentation:

Suspended solids, ppm, raw	290
effluent	105
per cent removed	64
5-day BOD, ppm, raw	260
effluent	150
per cent removed	42
Raw sludge to digester, gallons	24,920,800
dry solids, lb	8,386,800
total solids, %	4.00
volatile solids, %	80.5

Digestion:

Sludge to elutriation, c ^a gallons	4,377,500
dry solids, lb	2,062,000
total solids, %	5.51
volatile solids, %	58.3
Gas production, metered, cu ft: to boilers ^d	29,349,000
to waste	24,013,000
total	53,362,000

Vacuum Filtration:

Hours operated	1,440
Sludge filtered, gallons	4,704,400
dry solids, lb	2,070,700
total solids, %	5.21
volatile solids, %	58.6
Filtrate, total solids, %	0.24
Ferric Chloride, lb	53,640
% on dry solids	2.59
Filter cake, lb	7,140,700
dry solids, %	29.0

a For actual time of operation.

b For chlorinated flows only

c Metered quantity only; supernatant overflow not included.

d Estimated figure; meter inoperative most of year.



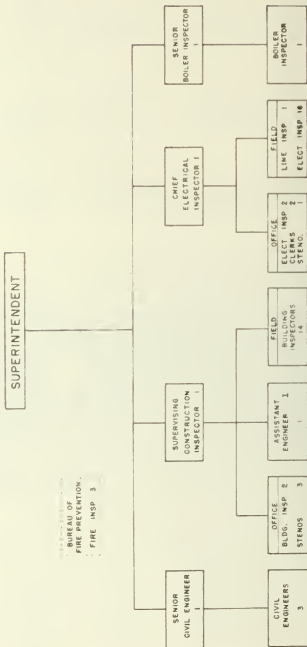
Pretreatment, Mixing &
Sedimentation Bldgs.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

SUMMARY OF OPERATION COSTS 1946-47 to 1950-51

Item of Expenditure	1946-47	1947-48	1948-49	1949-50	1950-51
Permanent Salaries	\$ 54,324	\$ 55,979	\$ 61,221	\$ 64,069	\$ 63,684
Holidays	931	906	989	1,108	1,053
Overtime	34	97	45	67	20
Temporary Salaries	3,109	4,255	4,963	1,631	2,018
Wages	9,066	11,071	12,292	13,547	16,185
Contractual Services	6,558	7,492	10,286	12,937	14,746
Heat, Light & Power	11,283	9,840	12,619	13,957	16,312
Materials & Supplies	19,548	23,796	24,128	23,625	28,571
TOTAL	\$104,853	\$113,436	\$126,543	\$130,941	\$142,589
Richmond & Sunset Flow (gravity) MG	1,645	2,196	2,668	2,810	2,826
Sunset Flow (pumped) MG	1,774	1,484	1,503	1,677	1,509
Total Flow MG	3,419	3,680	4,171	4,487	4,335
Estimated Cost Per Capita (base population)	\$0.51 205,000	\$0.54 210,000	\$0.57 220,000	\$0.57 230,000	\$0.62 230,000
Cost of Operation Per MG	\$30.67	\$30.83	\$30.34	\$29.18	\$32.89

CITY AND COUNTY OF SAN FRANCISCO
DEPARTMENT OF PUBLIC WORKS
ORGANIZATION CHART
BUREAU OF BUILDING INSPECTION



APPROVED

FIRE INSPECTORS ASSIGNED TO THIS
BUREAU BY THE FIRE DEPARTMENT
TO CHECK ALL PLANS FOR
COMPLIANCE WITH FIRE CODES AND
TO REPORT TO SUPERINTENDENT
ON ALL NONCONFORMITIES WITH
BUILDING CODES

C. G. Bush
CESTER G. BUSH, SUPERINTENDENT
BUREAU OF BUILDING INSPECTION

Bureau of Building Inspection

FUNCTIONS

The Bureau examines and reports on all applications for permits submitted to the Department of Public Works for new buildings, alterations to existing buildings, billboards and signs (electric and non-electric); the Bureau inspects all this work as it progresses, makes final inspection and issues Certificates of Final Completion when the work is finished.

There are four 'called inspections' on buildings:

- a. Foundations or other concrete forms must be inspected and approved before concrete is poured.
- b. Inspection before interior lathing. This is to see that all bracing, framing and fire stops are installed.
- c. Inspection before exterior or structural plaster is in place.
- d. Final inspection prior to occupancy.

The Bureau cooperates in consultation with architects, engineers, contractors and home owners in the preliminary stages of the preparation of their plans, whether for new buildings or for alterations to existing buildings. It studies and reports on legislation affecting building matters and proposes new legislation as required.

The Bureau examines and reports on various public building construction to the end that conformity with our Building Code is attained.

The Electrical Inspection functions are in accordance with existing ordinances dealing with electrical hazards to life and property.

State of California laws require that the electrical installation of wiring circuits, fixtures, signs, motors and electrical appliances be made by contractors licensed by the State, and San Francisco ordinances require that such licensed contractors be registered with the city. This is handled by this section of the Bureau. Industrial plants which have their own plant electricians must also register with the Bureau.

It is the duty of the Bureau to regulate and supervise the installation of interior electric wiring of commercial, industrial and residential buildings, and to insure by frequent and adequate

inspection that the standards provided for in City Ordinances, State and National Codes are maintained. Closely tied in with the inspection of interior wiring of buildings are other activities of the Bureau made necessary by the provisions of electrical ordinances affecting other City departments, and which entail cooperation with the Fire Prevention Bureau, Police Department, Health Department, and with the Division of Industrial Safety of the State of California.

All spray painting establishments in the City of San Francisco are licensed through the Fire Prevention Bureau, and before licenses are issued the electrical work connected therewith must be approved by this Bureau.

Reports of fire presumably caused by defective electrical installations and all places reported to be of potential electrical hazard are also checked by the electrical inspectors.

Coin operated amusement devices with electrical controls are licensed by the Police Department and, before issuance of permit, are required to meet the approval of the electrical inspector.

Night clubs and places of public assembly are licensed through the Health Department and, before a permit to operate is granted, the requirements of this Bureau in regard to adequate lighting and emergency lighting must be complied with.

A copy of all complaints and violations of the Electrical Safety Orders of the State of California issued to property owners is filed with this Bureau, is checked and verified by the electrical inspectors, and is held in the files until final approval is made.

PERSONNEL

The personnel of this Bureau as of June 30, 1951 consists of the following classifications:

17	-	A106	Building Inspectors
1	-	A110	Supervising Construction Inspector
2	-	B222	General Clerks
4	-	B408	Clerk-Stenographers
1	-	E2	Line Inspector
18	-	E4	Electrical Inspectors
1	-	E8	Chief Electrical Inspector
1	-	F404a	Engineer, Civil
3	-	F410a	Engineers, Civil
1	-	F560	Superintendent
2	-	M158	Boiler Inspectors
1	-	F412a	Senior Engineer, Civil
52	-	Total	

EQUIPMENT

29 - Passenger Automobiles

ORGANIZATION

Superintendent - In addition to performing the duties of his office, he takes an active part in the deliberations of various departments of the City government as well as other organizations with reference to matters of building construction, the building code, and building safety.

Supervising Construction Inspector - Under general administrative direction acts as assistant to the Superintendent in the field; assigns and supervises the work of building inspectors; prepares records and reports; checks construction progress and performs related duties as required.

Building Inspectors - One building inspector assists the Supervising Construction Inspector. He assists the public at the counter and provides them with the information they seek concerning various building regulations.

One building inspector represents the Director, Department of Public Works, on all cases coming before the Board of Permit Appeals with the exception of new construction. He inspects and reports on all night club and dance halls, and condemnations, when requested by the Police Department and Department of Public Health. He performs other related duties as required.

One inspector was assigned to the Metropolitan Park-Merced Housing Project and the Stoneson Housing Project. These projects represent approximately \$30,000,000 worth of construction. It was necessary to have a building inspector on these jobs constantly in order to provide thorough and continuous inspection of such major construction. It was impossible for a district inspector properly to take care of such a project in addition to his other duties; furthermore, it eliminates costly delays on the part of the contractors. With a building inspector continuously on the job the owners are enabled to prosecute their work in an orderly, systematic and economical manner.

Fourteen building inspectors are assigned to definite districts into which the city is divided and are charged with the responsibility for inspection work in their respective districts. This includes new construction of all types; alterations, billboards and signs. They report on all applications for construction in their districts prior to examination by the divisions of

the Bureau, prepare and post Certificates of Final Completion, check and follow up complaints, interview property owners, and appear before courts in matters of condemnation and prosecution.

Boiler Inspectors - They make all investigations, inspections and reports pertaining to construction of steam boilers and air pressure tanks.

Senior Engineer (Civil) - Acts as Chief Structural Engineer and as principal assistant to the Superintendent; has wide latitude for independent and unreviewed action and decisions in establishing general engineering policies; reviews engineering data submitted for approval of new materials and assemblies and makes recommendations to the Superintendent regarding such approvals; supervises the work of the other engineers in the Bureau, and performs related duties as required.

Structural Engineers (Civil) - They check and report on all plans pertaining to structural engineering, make field inspections, follow up matters concerning structural safety brought to their attention by the Supervising Construction Inspector or the district building inspectors, and assist other departments or Bureaus in structural matters.

One Engineer, Civil, examines all plans and details for new construction and estimates the cost thereof. He also represents the Director, Department of Public Works on all cases coming before the Board of Permit Appeals which concern new construction.

Clerical Force - Performs general and varied stenographic work, maintains records and files. Performs various related duties as required.

Chief Electrical Inspector - Under general direction assigns, supervises and reviews the work of electrical inspectors, approves or disapproves plans and specifications for electrical installations, supervises the maintenance of inspection records, makes required reports and performs related duties as required.

Two electrical inspectors are detailed to the enforcement of the Electrical Sales Ordinance. This ordinance governs the sale, display, or giving away as a premium, all electrical material, devices and appliances designed for attachment to, or installation in or on any electrical circuit or system for light, heat or power. This entails visiting all retail stores, premium stores, factory agents, jobbers manufacturers, and wholesalers to inspect all materials, devices, and appliances, and to determine whether they are approved by this department before they can be sold, displayed, or installed in San Francisco. In many cases this means granting a provisional approval on articles that have been submitted to Under-

writer's Laboratories, Inc., for testing, but testing not having been completed, allows a manufacturer to install or sell these appliances or materials with the proviso that any corrections required be made in the field. There are 2,318 retail stores registered under this ordinance at present. These stores are visited regularly for the purpose of inspecting the merchandise, and as more merchants are going into business all the time and many ownerships are being changed it is necessary to visit these stores to check their registration and inspect their merchandise.

The Line Inspector inspects all installations, alterations, and maintenance of overhead lines owned and operated by public and private utilities used for the purpose of distributing electric power and light, communication and signal transmission, to see that they conform to the Rules for Overhead Line Construction (G.O.95), Public Utilities Commission, State of California, and the San Francisco Electrical Code. The line inspector also checks plans and specifications, and inspects on all overhead lines pertaining to trolley coach installations. He inspects temporary electrical street decorations when supported by trolley span wires, or messengers. He inspects installations of radio and television antennas. He checks all underground districts to see that they are kept clear of all overhead wires and cables. He checks the erection of scaffolds that may be in proximity to high voltage lines. During the fiscal year 1950 -51, one hundred one pole permits were issued.

Two electrical inspectors are assigned to office work. They handle all complaints and requests for information from the public.

Fourteen electrical inspectors are assigned to districts in the city and each handles all of the electrical work in his assigned district except those items under the Electrical Sales Ordinance.

BUILDING CODE

At the present time two members of the Bureau are working with and under the supervision of the Superintendent in reviewing the present building code, which became effective in 1947, for the purpose of clarifying many portions of the code as well as eliminating conflicting requirements in the code itself and conflicts between other local and state building requirements.

It is proposed to make such amendments to the code as to bring it into conformity with the latest construction and code practices and eventually to have as nearly as possible a performance code.

BUILDING CONSTRUCTION

The volume of building construction for the following fiscal years was:

1947-1948	\$ 56,477,050
1948-1949	77,802,043
1949-1950	57,390,275
1950-1951	78,432,578

The Metropolitan Park-Merced Housing Project is almost completed. The shopping center in the Stoneson Housing Project is well under way, representing a \$25,000,000 construction cost. Standard Building Company has started a shopping center south of Sloat Boulevard.

The National Production Authority which has come into being as a result of the so-called 'Police Action' in Korea has, by establishment of controls, retarded certain construction, the effects of which are gradually being reflected in number of permits being filed.

WORK DONE

The extent of routine operations of this bureau for the fiscal year is set forth in the following tabulation taken from the records of the Central Permit Bureau.

Type of Construction	No. of Permits	Estimated Cost
1A	33	\$ 24,473,146
1B	16	6,907,413
2	-	--
3	54	5,023,091
4	23	460,676
5	2,170	24,966,250
Alterations & Billboards	6,642	16,602,002
Totals	8,938	\$ 78,432,578

Type 1A - Steel frame with reinforced concrete walls and floors. Fire resistive construction.

Type 1B - Built entirely of reinforced concrete. Fire resistive construction.

Type 2 - Heavy timber construction with exterior walls of masonry.

Type 3 - Wood frame floors with exterior walls of masonry. Ordinary masonry construction.

Type 4 - Light incombustible frame construction.

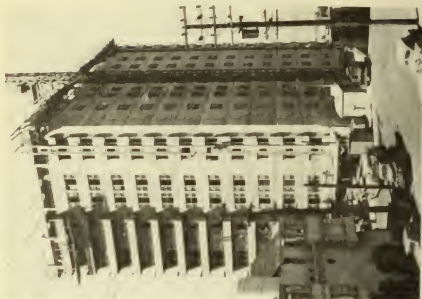
Type 5 - Wood frame construction.

The following compilation of statistics of monthly reports indicates the volume of work done during the fiscal year for other than Electrical Inspection, unless noted:

Number of inspections reported by inspectors of buildings	60,630
Number of projects remaining on which permits have been issued that have not been reported completed by inspectors of buildings	3,657
Number of complaints that have been reported adjusted by inspectors of buildings	2,856
Number of inspections reported by inspectors of boilers	2,483
Number of projects remaining on which permits have been issued that have not been reported completed by inspectors of boilers	3
Number of complaints and requests for information recorded	55
Number of applications for permits examined by and approved by structural engineers	4,949
Number of applications for permits pending	158
Number of applications for permits examined and approved by plan checker	2,132
Miles traveled during the year by passenger cars on inspection service; includes electrical inspectors	181,011

The following compilation of statistics indicates the volume of work done during the fiscal year for the Electrical Inspection:

Permits issued	18,941
Installations made	54,282
Complaints investigated	8,061
Installations uncovered that were not recorded with the department ('sneaked in' jobs)	3,001
Installations in progress as at June 30, 1951	22,766
Installations completed	16,698
Pin ball machine inspections	4,580
Juke box inspections	716
Electrical Sales inspections	4,461
Overhead line inspections	4,826



1000 GREEN ST.
Erected by
Theo. G. Meyer & Sons
Type 1B - 16 Stories - 62 Apts.



Ping Yuen
Housing Authority
City of San Francisco



Home Insurance Co.
NE California & Kearny Sts.



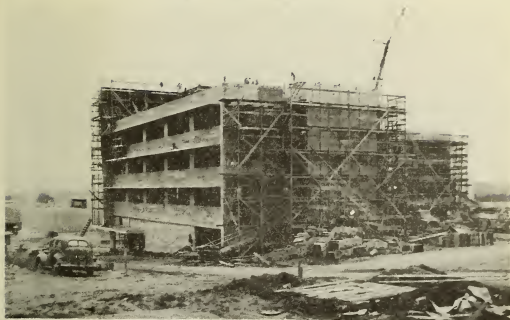
North Beach
Housing Authority
City of San Francisco



Stonestown Shopping Center
Erected by Stoneson Dev. Corp.
19th Ave. near Eucalyptus Drive



The Emporium
Erected by Stoneson Dev. Corp.
19th Ave. near Eucalyptus Drive



Medical Center
Erected by Stoneson Dev. Corp.
19th Ave. near Eucalyptus Drive



Lakeshore Plaza Shopping Center
Erected by Standard Building Co.
Sloat Blvd. Opp. 35th Ave.

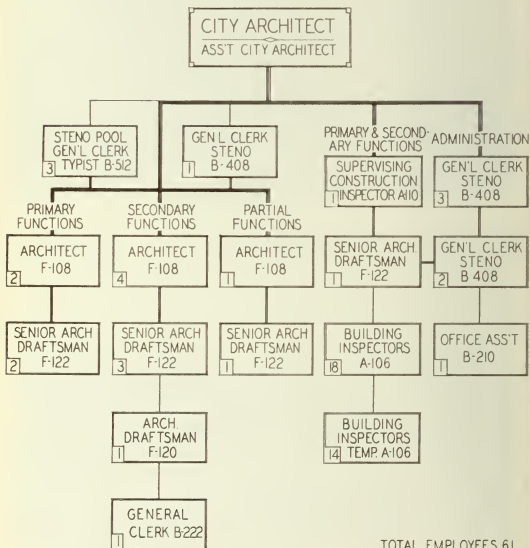
BUREAU OF ARCHITECTURE

DEPARTMENT OF PUBLIC WORKS

DODGE A RIEDY CITY ARCHITECT

ORGANIZATION CHART

JUNE 30, 1951



TOTAL EMPLOYEES 61

[3] NUMBER OF EMPLOYEES

Dodge A. Riedy - City Architect

FUNCTIONS

The activities of the Bureau of Architecture are divided into three distinct functions. Primarily the Bureau is concerned with complete architectural services on requests of other Bureaus and Departments for alterations, general repairs, maintenance, modernization, and new construction programs. Program building survey requirements with necessary survey research for requirements including estimates and total allotment for future civic building construction budget is an important function of this division.

The secondary function is concerned with supervising, consulting, coordination, allotment programing, estimating and checking the civic work program of Architects under contracts. This function has greatly increased over our primary function due to the activities of the 1948 School Bond Issue. The primary and secondary functions require complete building construction field inspectors.

Partial function includes architectural services such as design, planning, architectural detailing, and specifications for the Bureau of Engineering and the Water Department. This function also includes preliminary studies, complete with program requirements, building cost estimates, and total budget allotment for future civic new building construction as well as complicated alterations for long term budget purposes on requests of other Bureaus and Departments.

GENERAL

At the end of this fiscal year, we have completed approximately 50% of the 1948 School Bond Program. The following is a resume' of this program.

Construction Completed	\$ 1,613,757.03
Construction Under Contract	11,202,435.20
Plans completed and ready to advertise after June 30, 1951	3,655,875.00
Working Drawing Stage	7,323,117.00
Preliminary Drawing Stage	13,347,002.00
Modernization Program Drawings	641,045.00
Total	37,783,231.23

Progress was hindered by the increased building cost. Many projects were reprogramed during the preliminary and working drawing stage in order to reduce the area requirements of the original program.

Bureau of Architecture

The Bureau of Architecture's activities on the School Bond Program new construction projects will be ebbing during the beginning of the next fiscal year and consequently activities will be increased on the maintenance, modernization, and alteration programs.

An achievement of cooperative planning, designing, and developing of construction contract documents between approximately 30 outside Architects, 18 Structural Engineers, and 13 Mechanical and Electrical Engineering firms was necessary in order to allow the various stages of the building program to progress.

Similar to the School Program, but in a smaller scale, projects for the Police, Library, Fire, Juvenile Probation, and Health Departments have proceeded as rapidly as these respective programs could permit.

Construction work completed was 300% over last fiscal year. Contracts under construction were increased 50% while the work under preparation is practically the same. However, approximately \$3,500,000.00 of the work under preparation is completed and ready for advertising for bids.

PERSONNEL

The total staff of the Bureau remained about the same during the fiscal year except in the Inspection Division, 14 temporary Inspectors were hired for school modernization summer work, which as a rule, will be terminated within three months.

	July 1, 1950	June 30, 1951
City Architect	1	1
Assistant City Architect	1	1
Architects	6	7
Sr. Architectural Draftsmen	6	7
Architectural Draftsmen	3	1
Office Assistant	2	1
General Clerk	0	1
General Clerk Stenographers	6	6
General Clerk Typists	3	3
Supervising Constr. Inspector	1	1
Building Inspectors	21	18 plus 14 Temp.
Total	50	47

The personnel is divided into four groups and located as follows:

Personnel	Group	Location	Activities
7	1	Room 265, City Hall	Administrative, Conferences, Assembly of Plans and Spec. for bidding, General Files, Budget Drafting.
8	2	Room 250, City Hall	Inspection, Estimates, Preliminary Dept. Program & Budget Section, Analyses of Construction Costs.
14	3	45 Hyde Street	General Drafting Room. Specifications, Drawings, General Working Drawing Dpt. Checking, Research & Report Section.
32	4	In the Field	Field Inspection

WORK COMPLETED

The majority of the work performed by the Bureau of Architecture during the fiscal year of 1950-1951 consisted of supervising, consulting, coordinating, estimating, field inspection, and checking the civic work program of Architects under contract. Editing all specifications and bid proposals, submitting documents to contractors, and analyzing bids for approval is also a portion of this work.

During the past fiscal year, the value of the work performed was as follows:

Work Completed	\$ 5,423,219.70	
Contracts Under Construction	12,477,669.80	
Work Under Preparation	28,650,039.00	\$46,550,928.50

The segregation of this work by Departments for which the work was done is shown in the following table. Details of the class of work and the type of project will be found in Appendix II.

CURRENT DATA - SUMMARY

Showing all Work Completed, Contracts under Construction, and Work Under Preparation - July 1, 1950 to June 30, 1951.

Bureau of Architecture

Work Completed

Board of Education

School Building Construction	\$ 1,365,883.88	
Miscellaneous Alterations	33,753.53	
Modernization Projects	214,119.62	\$1,613,757.03

Public Health

San Francisco Hospital	\$ 197,247.49	
Laguna Honda Home	27,989.00	
Hassler Health Home	13,389.00	
Health Centers	13,984.20	\$ 252,609.69

Recreation & Park

Legion of Honor	\$ 6,967.58	
M.H. DeYoung Museum	17,729.76	\$ 24,697.34

Fire Department

Miscellaneous Alterations		17,027.00
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Police Department

General Construction	\$ 147,096.11	
Miscellaneous Alteration	8,706.97	155,803.08

Juvenile Court

Youth Guidance Center		3,029,597.70
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Public Library

New General Construction		207,351.30
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Civic Center

City Hall	\$ 97,361.56	
Civic Auditorium	25,015.00	122,376.56

Sub-Total \$5,423,219.70

Contracts Under Construction

Board of Education

School Bond Construction	\$10,430,501.70	
Miscellaneous Alterations	74,956.00	
Modernization Projects	696,977.50	\$11,202,435.20

Public Health

San Francisco Hospital	\$	35,693.80
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Recreation & Park

Legion of Honor	\$ 8,294.00	
M.H. DeYoung Museum	5,115.00	\$ 13,409.00

Fire Department

New General Construction	\$399,346.21	
Miscellaneous Alterations	6,897.00	406,243.21

Police Department

Miscellaneous Alterations		10,439.00
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Juvenile Court

Youth Guidance Center		735,378.59
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Civic Center

Civic Auditorium		74,071.00
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Sub-Total	\$12,477,669.80	
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Work Under Preparation

Board of Education

School Bond Construction	\$24,325,994.00	
Modernization Projects	591,045.00	
Miscellaneous Alterations	50,000.00	\$24,967,039.00

Public Health

San Francisco Hospital	\$ 314,500.00	
Laguna Honda Home	320,000.00	
Sunset Health Center	100,000.00	734,500.00

Fire Department

New Construction		661,000.00
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Recreation & Park

M.H. DeYoung Museum		50,000.00
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Civic Center

Civic Auditorium	\$1,665,200.00
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Juvenile Court

Youth Guidance Center	41,800.00
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Public Library

New Construction	225,000.00
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Public Works

Asphalt Yard Reconstruction	35,000.00
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Miscellaneous	270,500.00
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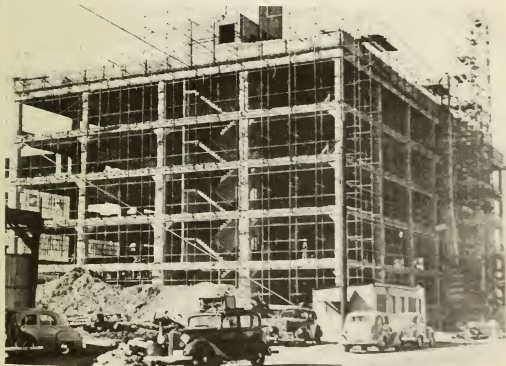
Sub-Total	\$28,650,039.00
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GRAND TOTAL	-	\$46,550,928.50
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Bureau of Architecture



ANZA ELEMENTARY SCHOOL
Hertzka & Knowles, Architects



JOHN A. O'CONNELL VOCATIONAL & TECHNICAL INSTITUTE
Dodge A. Riedy, Architect

Bureau of Architecture



HILLCREST ELEMENTARY SCHOOL.
W.P. Day, Architect



ULLOA ELEMENTARY SCHOOL
Albert F. Roller, Architect

There has been a reorganization of management of the department by the addition of an Assistant Director for Maintenance and Operation as shown on the organization chart in the first pages of the report. This change has resulted in more efficient operation with resulting improved service and reduced unit costs. It also leaves the Director free of much routine detail in order to handle major phases of the departmental functions.

This unit is comprised of the following bureaus whose activities are further described:

Bureau of Sewer Repair	Bureau of Street Cleaning
Bureau of Street Repair	Bureau of Building Repair

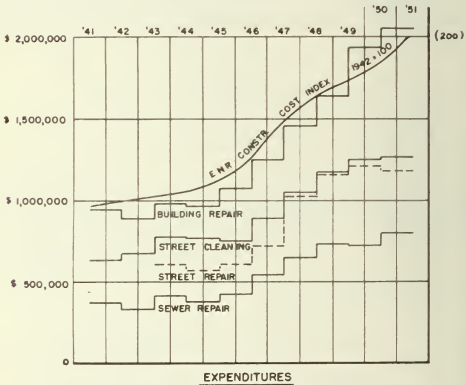
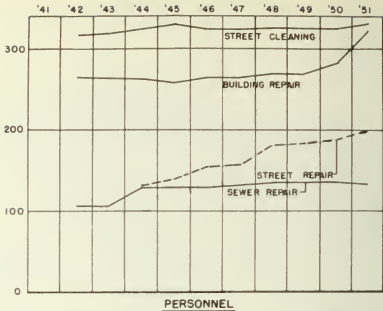
The Bureaus of Street Repair and Street Cleaning were established July 1, 1950 by dividing the former Bureau of Streets.

The above bureaus are to move in October from the aged yard at 11th and Bryant Streets to a new plant at 2323 Army Street, east of the Bayshore Freeway. This change should result in further improvements and economies in operation. The obsolete asphalt plant remains at the old yard. Extensive studies, shown in a separate report, indicate the economy of the construction of a new asphalt plant adjacent to the Southeast Sewage Plant.

The annual expenditures and personnel for the past decade are shown on the accompanying chart. Despite the stability in the number of employees, costs have almost doubled, following the rising costs reflected in the Engineering News Record construction cost index plotted on the chart. Funds for the operation of the four bureaus are provided from (1) budget appropriations 52%, (2) work orders from other city agencies 22%, and (3) gas tax funds 26%, distributed by work order from the Special Road Improvement Fund and the Special Gas Tax Street Improvement Fund.

Accompanying charts show for each bureau the proportionate costs of various operations, number of employees, number of vehicles and other pertinent data.

This foreword would not be complete without expressing a sincere appreciation to the personnel for their loyalty and cooperative efforts in maintaining and improving the efficiency of the department.



DEPT. OF PUBLIC WORKS
MAINTENANCE & OPERATION

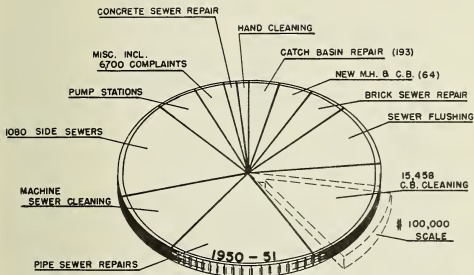
Twenty-four hour service is assured with the following system consistent with efficient and economical operation:

The majority of the crews work a normal day shift on the site with a telephone report system by all crews at 8 and 10 A.M. for orders and materials. Eductor and flushing crews are promptly dispatched from the yard at 8 A.M. and report back at 4:45 P.M. A small night crew operates from 4:30 P.M. to 12:30 A.M. From 12:30 to 8 A.M. complaints are taken by the watchman with a crew readily available on call from home. On non-work days a truck maintains lanterns, barricades and minor trouble reports. During normal non-work hours a notification system is in use which has been effective.

Ten eductors are in use principally to clean catch basins, to water jet backfill, flush sewers where hydrants are not readily available, and to pump out trenches or flooded basements. An eductor is essentially a truck mounted tank with a pump. Many refinements are used including baffles to settle the solids in the tank and allow the water to be re-used in sucking heavy muck up. They are efficient for the local sandy material; however debris such as glass, wood or rock seriously slows down operations. Catch basins are of the drop inlet type with a 6 inch high open side, horizontal grating and a sump. The large side opening is an aid in avoiding floods but increases the cost of cleaning. The sumps are effective in keeping much of the street litter out of the sewers. Mosquitos are not a serious local problem; however such sumps require occasional checking by the bureau-operated mosquito control crew. A thorough study is being made toward reducing the cost of cleaning catch basins including reports from other cities and thorough analyses of costs.

Sewers are cleaned by the use of sewer cleaning power units, which consist of a truck mounted crane with a demountable hoist, 2 gasoline motors, guide wheels, cable and buckets designed to drag lines through a sewer and hoist muck to the surface. In this operation and catch basin cleaning, large quantities of material require hauling some 10 miles round trip to disposal areas at considerable cost.

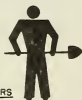
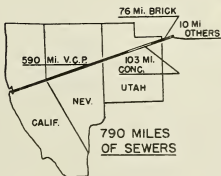
Service calls, an important phase of this activities work, receive prompt action in the interests of public health, safety, protection of property, avoidance of further major troubles, and good public relations. Over 6,700 calls were received during the year, usually by telephone day and night, or through the systematic checks of the system. They include such items as minor leaks, odors, stoppages, or lost articles, to major breaks, cave-ins and pump failures.



EXPENDITURES



54



136



16,660 CU. YDS.
SILT REMOVED



24 HOUR
OPERATION

BUREAU OF SEWER REPAIR



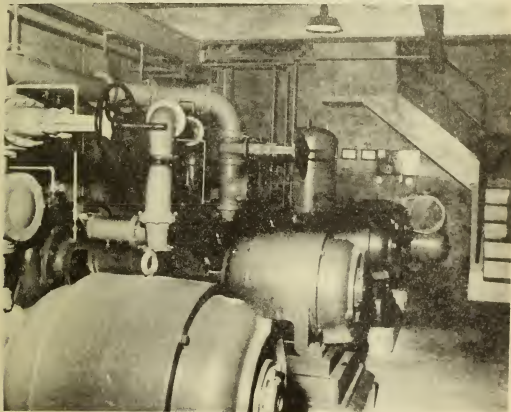
Power Hoist
Used with Sewer Cleaning Power Unit



Sewer Cleaning Power Unit
Mounted on Ford Chassis
Built in City Shops

SEWAGE PUMPING STATIONS

Descriptions, cost and quantity data and a location map for the 12 pumping stations are shown in the appendix. All the stations have automatic controls and, except the Commercial Street plant, have automatic bypasses. Operators are provided for two shifts at the Marina and Commercial Street plants, one shift at the Park Merced and Sea Cliff No. 2 Stations, and for regular maintenance and inspection of the other plants. Emergency pumps in case of power failure are inadequate at the Commercial Street station and a supplementary station is planned. Operation of these stations was transferred April 1, 1950 from the Electrical Section of the Bureau of Engineering to the Bureau of Sewer Repair.



PARK MERCED SEWAGE PUMPING STATION
Pump Room - South End

BUREAU OF STREET REPAIR
W.S. Merrill, Superintendent

FUNCTIONS

Construction and major repairs to City Streets are performed by contract through the Bureau of Engineering and, in some cases, by the State of California. General maintenances and repairs, limited by the Charter to a maximum cost of \$2,000, are done by the Bureau of Street Repair.

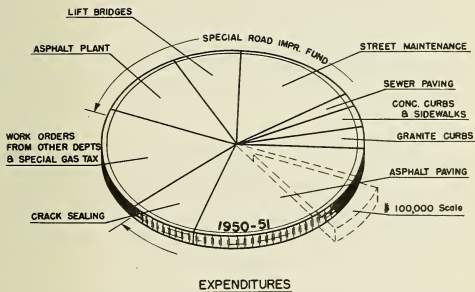
This Bureau is responsible for the maintenance and repair of some 800 miles of accepted City streets, including pavements, crack sealing, curbs and stairways, and for the operation of three lift bridges, an asphalt plant and several dumps. Off street work and certain street pavement replacement is done by work order for other City departments.

OPERATIONS

The above work is accomplished through the Bureau superintendent by the asphalt division, the concrete division, and the sealing division, each with a general foreman, and the lift bridge operation which is controlled directly by the superintendent. The asphalt division includes the asphalt plant, six asphalt pavement repair crews, clean-up groups and pavement breaking crews. The concrete division consists of crews for sidewalk and concrete pavement repairs, brick pavements, granite curb work, and the necessary clean up, heavy equipment, lights and barricades. The crack sealing division with four crews and general yard duties performs an important preventive maintenance function due to local soil conditions, old pavement bases and street grades. The Bureau operates with the following personnel:

1 Superintendent	23 Chauffeurs
3 General Foremen	4 Granite Cutters
1 Foreman, Asphalt Plant	29 Asphalt Workers
1 Paver	15 Asphalt Finishers
3 Cement Finishers	11 Asphalt Subforemen
5 Cement Finisher Helpers	1 Asphalt Finisher Foreman
52 Laborers	17 Operating Engineers
3 Labor Foremen	17 Watchmen
3 Engineers, Hoist & Portable	3 Mixermen

192 Total Personnel



65



192

BUREAU OF
STREET REPAIR

FUNCTIONS

San Francisco's ocean breezes, rolling hills and cosmopolitan nature have gained it a world wide reputation as a majestic and colorful city; however, they have materially added to the problem of keeping a dense metropolitan area clean. The general lack of building front setbacks, wherein adjacent property owners aid in cleaning lodged street litter, places almost the full burden on the street cleaning department. Streets are cleaned by hand brooming, machine sweeping and effectively through extensive use of machine flushing.

This Bureau is charged with the work of cleaning, weeding and disposal of dirt and debris from some 800 miles of accepted paved streets from curb to curb, including almost 50 curb miles of rapidly, growing island strips. Services are provided for the many parades, city owned lots, hillside street stairways and underpasses. Three fill and cover dumps and three garages are part of the operations.

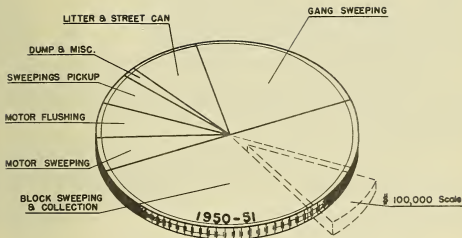
OPERATIONS

The Bureau of Street Cleaning performs its functions through the Bureau Superintendent and his four district directors, each of whom is responsible within a sector of the City for (1) sweeping and collection gangs, (2) refuse collection and disposal, and (3) street cleaning by motor flushing and motor sweeping. Regular studies are made to obtain a systematic and economical coverage of the City and to use the type of cleaning best adapted to conditions. Motor flushing and hand sweeping are better adapted to areas of heavy curb parking than motor sweeping. The motor flushing has been very effective on streets with a decided grade. Over 200 waste paper receptacles of heavy galvanized wire, placed near the curbs this year, have been effective in reducing litter. Programs are planned to obtain further assistance from the public and to improve cleaning operations including more efficient methods of refuse loading.

This Bureau operates with the following personnel divided into four districts:

1 Superintendent	49 Chauffeurs
4 District Directors	257 Laborers
12 Sub Foremen	1 Gardener

324 Total Personnel



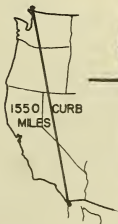
EXPENDITURES



61

8 REFUSE GETTERS
 8 FLUSHERS
 8 OTHERS

27 DUMP TRUCKS
 10 MOTOR SWEEPERS



324

BUREAU OF STREET CLEANING



Motor Sweepers - Covered Dumps - Mechanical Load Dump



New Motor Street Sweeper

FUNCTIONS

The responsibility for janitorial, building engineer, and the other routine service for city owned buildings is, in general, assigned to the department using the structure, however, janitor service is provided certain buildings by this Bureau. Minor repairs and maintenance painting are done partly by the operating staffs but principally by the Bureau of Building Repair. Alterations, additions or major overhauls are made through contract by the operating department or by work order to this Bureau.

This Bureau provides janitor, elevator and window washing services, operating engineers, and 10 regularly assigned mechanics for the operation and maintenance of the City Hall, Civic Center Power House, and Hall of Justice. Janitor service is furnished the Health Center, Retirement Board, Planning Commission, and all police stations. Over 40 mechanics are regularly assigned to various buildings for the minor repairs and painting. The remaining personnel are used for work orders and shop operations.

Traffic striping, parking stall and curb painting are accomplished by this Bureau under the general direction of the Traffic Section of the Bureau of Engineering.

OPERATIONS

City Hall Dome Repair: An outstanding job of fire damage repair was performed at a saving of over 30% compared to private contractors' estimates. The difficult construction of copper sheathing over wood, tile and steel frame during rains, winds and other hazardous conditions were overcome by commendable diligence and good workmanship.

In order to perform the above duties, it is necessary to have a complete staff of operating personnel and building mechanics. Through the superintendent and his assistant, the Bureau operates the repair division, which includes 9 shops for various crafts, and the operating division which provides the janitorial and operating engineer services, with the following personnel:

Repair Division

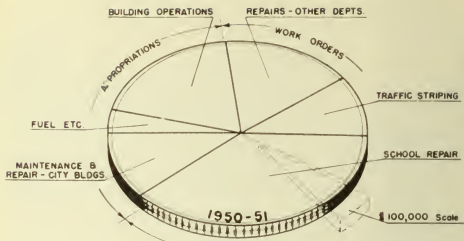
Operating Division

Bureau Superintendent

Assistant Bureau Superintendent

Painters, Plumbers, Carpenters	Janitors, Chief Operating
Sheet Metal Workers, Steamfitters,	Engineers, Window Cleaners,
Electricians, Cement Finishers,	Elevator Operators, Operating
Cement Finisher Helpers, Glaziers	Engineers, Watchmen
Locksmiths, Armature Winders,	
Tile Setters, Plasterers, Brick-	
layers, Hod Carriers, Laborers	

332 Total Personnel



EXPENDITURES



26



322

BUREAU OF BUILDING REPAIR



CITY HALL DOME - FIRE DAMAGE REPAIR
Bureau of Building Repair



NEW 2-TON TRACTOR CRANE
Bureau of Street Repair

CENTRAL PERMIT BUREAU

S. J. Rosenblum, Supervisor

FUNCTIONS

The Central Permit Bureau, a division of the Department of Public Works, is a clerical and cashiering unit of said department. The principal duties performed by this Bureau consist in the reception and recordation of Applications and the processing of same pursuant to City Ordinances and, upon the receipt of the necessary approvals, the Bureau issues Permits predicated upon these Applications.

The fiscal year 1950-1951 remained fairly stable in the matter of activities as compared with those of the previous year.

The Supervisory Head of the Central Permit Bureau also acts in the capacity of Cashier for the Department of Public Works. All receipts of the department are cleared through him and, pursuant to Section 82 of the Charter, are transmitted to the City and County Treasurer for daily deposit.

The personnel of the Central Permit Bureau, as of June 30th, 1951, was as follows:

- 1 Supervisor
- 1 Cashier (Electrical Division)
- 2 Senior Clerks
- 1 General Clerk
- 1 General Clerk-Stenographer
- 5 General Clerk-Typists

WORK PERFORMED

Enumerated below, are some of the major projects for which Building Permits were issued during the fiscal year being reported upon:

Laboratory - University of California	\$6,000,000.00
Department Store - Stonestown	2,000,000.00
The Hastings College of Law Building	1,273,166.00
University of California Hospital	7,000,000.00
Sutro Reservoir	1,019,935.00
7-Story Office Bldg.-Metropolitan Life Ins. Co.	2,200,000.00
Garage and Office Building - Greyhound Lines	1,250,000.00
Alter Children's Hospital	1,800,000.00
Medical Office Building - Stonestown	1,250,000.00
5-Story Office Building - Home Insurance Co.	980,000.00
Store - Sears, Roebuck & Co.	1,950,000.00

Comparative Statement of Permits Issued
Permits

	1950-51	1949-50	1948-49
Buildings	8,808	8,896	7,767
Billboards	130	444	234
Boiler Installations	182	190	213
Boiler Inspections	1,023	1,370	684
House Moving	91	86	105
Demolitions	153	112	113
Flue Registrations	45	49	47
Flue Permits - New Buildings	45	36	46
Flue Permits - Old Buildings	71	115	107
Flue Coupon Books - New Buildings	90	79	84
Flue Coupon Books - Old Buildings	11	18	22
Construct Sidewalks	16	15	43
Street Space	1,210	1,395	1,262
Excavations	1,095	1,132	1,037
Side Sewers	896	898	934
Excess Costs - Side Sewers	328	176	269
Sidewalk Flower Markets	44	36	37
Blasting	5	6	7
Advertising	23	30	17
House Number Certificates	1,397	1,423	1,331
Payments for Surveys	44	47	61
Payments for Engineering Inspection	81	81	95
Payments for Street Improvement Bonds	59	40	31
Public Utilities Street Openings	9,464	9,317	8,171
Posting Notices	1,159	1,152	1,179
Total Number of Permits Issued	26,470	27,143	23,896

Refunds made from Special and Trust Funds

	1950-51		1949-50		1948-1949	
	Refunds	Amount	Refunds	Amount	Refunds	Amount
Special Permit Fund						
(St. Space & Sub-Sidewalks)	956	\$ 40,070.00	528	\$ 23,540.00	1,807	\$ 71,410.00
House Moving Fund	2	200.00	12	1,200.00	74	7,400.00
Excavations	47	1,007.50	44	715.00	63	1,373.60
Side Sewers:						
Refunds to Depositors	891	36,325.77	726	31,461.48	988	37,408.94
Installation Costs						
credited to Gen. Fund		132,879.23		107,534.88		165,548.96
Deposits on Plans	1,300	31,155.00	1,729	45,985.00	1,521	26,435.00
Street Improvement Bonds	-	4,483.35	-	-	-	-
	3,196	\$246,120.85	3,039	\$210,436.36	4,453	\$309,576.50

Report of House Numbering Activities

1950-1951 1949-1950 1948-1949

House Numbers issued:

Private Construction

Investigations made

and Complaints adjusted

Changes in House Numbering ordered

Inquiries from Banks, Title Insurance

Companies, General Public, etc

answered

3,170	3,471	2,650
1,300	1,200	1,050
165	175	291
3,000	3,200	2,900

Additional Non-Revenue Activities

1950-1951 1949-1950 1948-1949

Inquiries pertaining to age and class of buildings, and other information requiring reference to old applications on file

9,500	9,250	8,750
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Plans brought from the basement by request for reference purposes and photostating

1,650	1,500	1,325
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Cashier's Report

Source of Receipt

Street Space Permit Deposits	\$	25,410.00
Sub-sidewalk Permit Deposits		-
House Moving Permit Deposits		300.00
Side Sewer Permit Deposits		166,375.00
Deposits on Plans		32,235.00

Excavation Permits

Special Deposits	\$	1,664.80	
Inspection fees			
for Excav. (Special Deposits)		225.00	
(Public Utility Corporations)		16,213.50	
(Lowering Curbs, etc.)		3,388.50	21,491.80

Fees for:

Building Permits	226,630.30	
Billboard Permits	689.00	
Demolition Permits	2,240.00	
Boiler Installations	915.50	
Boiler Inspections	4,546.50	
Use of Street Space	31,052.21	
House Number Certificates	5,721.00	
House Moving Permits	1,820.00	
Flue Registrations	820.00	
Flues - New Buildings	22.50	
Flues - Old Buildings	142.00	
Flues - New Buildings (Coupons)	1,125.00	
Flues - Old Buildings (Coupons)	220.00	
Posting Notices	3,419.00	279,363.01
Fees - Sidewalk Flower Markets		1,416.00
Side Sewers - Excess Costs		8,511.64
Advertising Charges		3,146.52
Payments on Street Improvement Bonds		-
Payments on Street Improvement Bonds (Ord. of 1934)		5,589.91
Fees for Surveys		10,330.00
Fees for Inspections		21,704.91
Misc. (See Monthly Reports for itemized detail.)		7,048,464.46
Total Receipts		\$7,624,338.25

Note: 34 Sidewalk Permits issued.
No fees charged

Deposits with City and County Treasurer
Classified by Funds

General Fund

Street Space & Sub-Sidewalk		\$ 25,410.00
House Moving		300.00
Side Sewer Deposits		166,375.00
Deposits on Plans		32,235.00
Surveys	\$ 10,330.00	
Inspections	21,704.91	32,034.91
Excavations		
Deposits	1,664.80	
Fees	19,827.00	21,491.80
Advertising		3,146.52
Street Improvement Fund		-
Street Improvement Fund (Ord. of 1934)		5,589.91
Side sewers - excess costs		8,511.64
Fees		
Building Permits	226,630.30	
Billboards	689.00	
Demolitions	2,240.00	
Street Space	31,052.21	
House Numbers	5,721.00	
House Moving	1,820.00	
Boiler Installations	915.50	
Boiler Inspections	4,546.50	
Flue Registrations	820.00	
Flues - New Buildings	22.50	
Flues - Old Buildings	142.00	
Flues - New Buildings (Coupons)	1,125.00	
Flues - Old Buildings (Coupons)	220.00	
Posting Notices	3,419.00	279,363.01
Sidewalks Flower Markets		1,416.00

Miscellaneous Funds

General Fund	1,366.89	
Spec. Road Improvement Fund	2,248,353.07	
State Highway Trust Fund	952,985.32	
Spec. Gas Tax Street Improvement Fund	2,070,445.89	
1944 Sewer Bond Fund	1,775,063.53	
S.F. Unified School District	64.96	
1948 School Bond Fund	184.80	7,048,464.46

Total Deposits with City and County Treasurer \$ 7,624,338.25

Classification of Building Permits Issued

Class or Type	No. of Permits	Estimated Cost	Fees
1-A	33	\$24,473,146	
1-B	16	6,907,413	
2	--	--	
3	54	5,023,091	
4	23	460,676	
5	2,170	24,966,250	
Alterations	6,512	16,585,452	
Totals	8,808	\$78,416,028	\$226,630.30
Billboards	130	16,550	689.00
Totals	8,938	\$78,432,578	\$227,319.30
(Total number of Building Applications received			9,730)

Flue Registrations and Permits

Flue Registrations	45	\$ 820.00
*Coupon Books-New Buildings	90	1,125.00
**Coupon Books-Old Buildings	11	220.00
Flue Permits-New Buildings	45	22.50
Flue Permits-Old Buildings	71	142.00
Totals	262	\$ 2,329.50

Miscellaneous Permits

To Raze Structures	153	\$ 2,240.00
To Move Buildings	91	1,820.00
Boiler Installations	182	915.50
Boiler Inspections	1,023	4,546.50
Posting Notices	1,159	3,428.00
Totals	2,608	\$ 12,950.00
GRAND TOTALS	11,808	\$242,598.80

*New coupon books contain
25 Prepaid Coupons.

** Old coupon books contain
10 Prepaid Coupons.

Central Permit Bureau

Electrical Inspection Revenue

Month 1950	Electrical Inspection Fees	Sign Inspection Fees	TOTAL	Contractors Registration	Plant Owners	Electrical Sales	GRAND TOTAL
July	\$ 4,652.35	\$ 501.05	\$5,153.40	\$ 150.00			\$ 5,303.40
August	6,120.95	474.40	6,595.35	50.00			6,645.35
September	8,875.95	427.40	9,303.35	100.00			9,403.35
October	5,778.75	312.25	6,091.00				6,091.00
November	6,007.95	473.90	6,481.85				6,481.85
December	7,642.30	325.40	7,967.70	600.00	\$ 20.00		8,587.70
1951							
January	7,890.30	348.80	8,239.10	8,600.00	560.00		17,399.10
February	5,519.65	331.40	5,851.05	750.00	40.00		6,641.05
March	6,690.85	494.25	7,185.10	100.00	10.00		7,295.10
April	7,467.15	374.70	7,841.85	100.00		\$ 70.00	8,011.85
May	8,989.85	531.05	9,520.90	250.00		100.00	9,870.90
June	7,954.90	463.35	8,418.25			20.00	8,438.25
TOTALS	\$83,590.95	\$ 5,057.95	\$ 88,648.90	\$10,700.00	\$630.00	\$190.00	\$100,168.90

The Bureau of Accounts controls the budgetary and financial activities of the Department. It is the point of origin of documents dealing with the disbursement of funds, and their guidance through required procedures until final liquidation.

The operating functions of the Bureau embrace control of payroll procedure, personnel records and field-timekeeping; purchase order requisitions, sub-storeroom and inventories; automotive expenditures and gasoline and tire records; work order job costs and invoicing; side sewer job and refund accounts; State gas tax subventions; the cash revolving fund for the Department; the stores revolving fund; budget preparation and control, operations of the Corporation Yard telephone exchange; and the supplying of clerical service to all Bureaus of the Corporation Yard.

The personnel of 30 consist of:

- 1 Supervisor in charge of the Bureau
- 2 Head Clerks
- 3 Bookkeepers
- 3 Senior Clerks
- 13 General Clerks
- 4 General Clerk-Stenographers
- 3 General Clerk-Typists
- 1 Telephone Operator

Included in the general functions of the Bureau are three well defined sub-divisions: Payrolls and Personnel with 2 Senior Clerks and 5 assistants: Purchasing and Stores with a Senior Clerk and 3 assistants: Gas Tax Subventions with a Head Clerk and 3 assistants.

Three field timekeepers check outside operations for payroll verification and also act as paymasters on semi-monthly paydays, delivering pay warrants to employees on the job.

Reports to the Director of operations in Building Repair, Sewers, Street Repair and Street Cleaning are prepared monthly by the Bureau of Accounts from the records maintained in the Bureau.

Job costs pertaining to property of the City damaged by outside causes and falling within the scope of the Department's control, are compiled and forwarded for collection. These costs amounted to \$9,257.16 for the fiscal year and embraced 173 cases, covering damages to bridges, automotive equipment, street structures, traffic signals and prisoner damage to police stations.

Bureau of Accounts

Transactions for the year totaled \$16,669,339.95, comprising:

Budgeted funds subject to control of \$10,543,473.00 - and appropriated to -

Bureau of Accounts	\$ 54,347.00
Bureau of Architecture	47,475.00
Bureau of Building Inspection	291,975.00
Bureau of Building Repair	734,212.00
Central Permit Bureau	37,542.00
Bureau of Engineering	754,599.00
Sewage Disposal Plant	295,100.00
General Office	98,017.00
Bureau of Sewer Repair	666,784.00
Sewage Pumping Stations	53,326.00
Bureau of Street Repair	929,618.00
Bureau of Street Cleaning	1,277,324.00
Bridges	106,051.00
Gas Tax (Special Road Improvement)	924,853.00
Spec. Gas Tax - Street Improvement Fund	3,278,200.00
Gas Tax - Street Construction	994,050.00

Side sewer deposits for installation and repair amounted to..... 140,582.00
 covering 876 permit deposits filed by property owners for work on 1079 separate house connections.

Interdepartmental service under work order procedure amounted to \$5,985,284.95 for the following divisions of the City Government:

Schools	1,045,425.40
Health	219,243.06
Recreation	27,215.08
Library	36,957.90
Public Building Improvements	82,667.86
Gas Tax Accounts	2,016,000.83
Engineering	14,988.97
Sewage Plants	6,531.74
Public Utilities	185,777.05
General Office	106,604.00
Sewer Bonds	70,900.00
Street Bonds	1,290,677.94
Sewage Treatment Bonds	424,100.00
Public Welfare	19,725.78
Fire Department	57,451.50
Special Inspection	15,605.60
Juvenile Court Bonds	14,225.00
State Highway Cleaning	52,972.81
Miscellaneous	298,214.43

The Bureau was engaged in the fiscal processing of contracts under the Street, Sewer, Sewage Treatment Plants, and School Bond program, which operations are expected to continue into subsequent years.

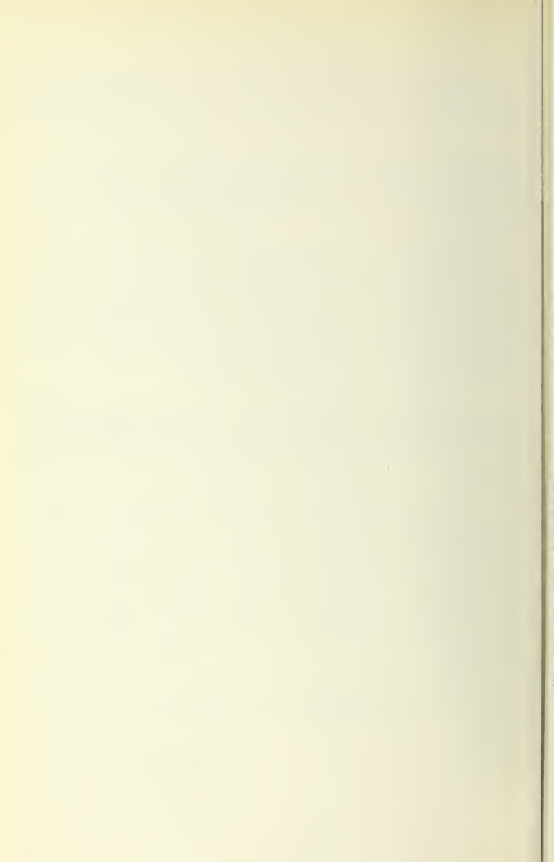
In the supplying of materials for the varied activities of the department, a sub-storeroom and a material yard are conducted, through which there were 17,782 transactions handled involving the delivery of items to jobs, while outside purchases from vendors brought about the issuance of 5,517 requisitions and 6,364 delivery orders.

The Stores Revolving Fund under the control of the Bureau is designed to permit the purchase in advance of constantly-used materials. Plumbing supplies, electrical items, paints, hardware, lumber, glass, tools, sewer pipe, brick, cement, castings and miscellaneous needs which can be foreseen, are in Stores and charged out to the various branches of the work as used. Controls have been established which facilitate monthly reimbursements for goods withdrawn, and Stores records are maintained on a perpetual inventory basis subject to annual physical check.

The Department Cash Revolving Fund of \$1,500.00 is used by the Bureau for payment of small bills and transportation charges, and enables workmen on jobbing operations to make cash purchases at neighborhood stores, thus avoiding trips to downtown establishments. All transactions are conducted under controls set up by Ordinance.

Detailed records are maintained of all expenditures, particularly of operations performed under work order procedure. In these, the Charter requires that all elements of indirect and supervisory costs be considered and made part of the final job cost. To accomplish this, indirect labor is pro-rated monthly on an exact percentage basis, as are overhead charges for accident compensation, sick leave, vacation, retirement, equipment replacement and miscellaneous. These items of overhead are accumulated in reserves to meet the requirements designated. Charges for small tools and shop supplies used in work order operations are placed against the miscellaneous reserve.

The Bureau has a central office at the City Hall and a division handling operating accounts at the Corporation Yard, where the greater number of employees are assigned.



BUREAU OF ENGINEERING
CURRENT CONTRACT DATA SUMMARY
Showing all Contract Work Awarded or Under Way
July 1, 1950 to June 30, 1951

Table	Type of Construction	No.	Contracts Awarded Aggregate Value	Amount Expended Fiscal Year 1950-51
A	Major Thoroughfares	5	\$ 471,043.27	\$ 376,680.19
B-1	Streets - Private Contracts	44	752,813.00	672,909.00
B-2	Streets - Assessment Proceedings	26	200,797.62	235,203.15
B-3	Streets - Public Contract, City Pay	8	61,693.72	41,090.22
B-4	Street Car Track Removal	5	987,332.31	1,055,776.14
C	Traffic Signals and Channelization	17	323,983.57	328,413.95
D-1	Sewers, Pipe, Vitrified Clay & Concrete	5	443,785.03	577,705.92
D-2	Sewers Concrete Monolithic	4	778,312.45	1,051,000.76
E-1	Sewage Treatment Plants	0	0	6,998,989.73
E-2	Miscellaneous	19	1,169,552.86	2,798,197.75
	TOTALS	133	\$ 5,189,313.83	\$14,135,966.81

TABLES

On the following pages appear separate tables of current contracts for each of the types of Construction listed above. The source of the funds used to finance each project is indicated in the tables according to the following:

Designation	Abbreviation Legend Description of Fund
General	General Fund City and County
Spec. Rd.	Special Road Improvement Fund
Major Sts.	Special Gas Tax Improvement Fund
State Hwy.	State Highway Fund
Assmt.	Assessed to property benefiting under the Street Improvement Ordinance of 1934
Pd. Prop. Owners	Costs borne by Property Owners under private contract
1944 Sewer Bonds	Bond Issue voted by citizens on November 7, 1944 - \$12,000,000
1947 St. Imp. Bonds	Bond Issue voted by citizens on November 4, 1947 - 22,850,000
1948 Sewage Tr. Bonds	Bond Issue voted by citizens on June 1, 1948 - \$15,000,000

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1950-51	Fund
A- Major Thoroughfares					
Judah St Widening Between 25th & 36th Ave (Pavement-Curbs-Sidewalk) The Lowrie Paving Co. Inc.,	4-12-50	8-14-50	\$ 22,855.63	\$ 20,605.63	Spec. Road
Woodside Ave. Betw. Portola Drive & Idora Ave. Section A (Grading Paving curbs, sidewalk) The Fay Improvement Co.	5-19-50	11-9-50	56,372.54	40,372.54	St. Imp. Bond Major Street
Resurfacing Bush St Betw. Lyon and Franklin Streets Dolores betw. Market & 21st Streets Fulton betw. Masonic & Franklin Sts. Howard St. betw. 8th & 9th Streets Laguna Honda Blvd. betw. Dewey Blvd. and Portola Drive Pine betw. Lyon & Franklin Streets So Van Ness betw. 14th & 26th Streets 17th betw. Castro & Valencia Streets The Fay Improvement Co.	6-28-50	1-16-51	123,367.47	123,367.47	Major Street Spec. Road
Alemanly Blvd. Sta 18+65 to Sta 36+00 (Paving Curbs, Etc.) The Lowrie Paving Co. Inc.,	6-28-50	1-12-51	34,929.25	34,929.25	State Hwy.
El Camino Del Mar (In Lincoln Park) Reconstruction (Drainage-Grading-Curbs-Pav.) Eaton & Smith	7-5-50	99%	119,137.50	98,600.00	Spec. Road Improvement

A - Major Thoroughfares

Junipero Serra Blvd. at Alemany (Pavement-Curbs, at Alemany Chas. L. Harney, Inc.,	7-26-50	3-21-51	33,525.30	33,525.30	State Hwy.
Bayshore Blvd. betw. Marin Street and Waterloo Street (Pavement-Curbs-Sidewalk and track removal) The Fay Improvement Co.	3-2-51	23%	114,221.25	23,120.00	St. Imp. Bond State Hwy
Woodside Ave Widening betw. Idora Ave & Laguna Honda Blvd (Curbs-Pavement-Sidewalk) The Fay Improvement Co.	4-20-51	2%	116,481.72	2,160.00	St. Imp. Bond Major Street P.U. - Elect
Resurfacing Franklin betw. Page & Lombard Sts Baker betw. Oak & Fulton Streets Fillmore betw. Marina Blvd and Chestnut Street Fell betw. Polk & Franklin Sts. Gough betw. Haight & Lombard Guerrero betw. Market & 14th Sts. Jefferson betw. Fillmore & Webster Oak betw. Van Ness & Gough Sea Cliff betw. 25th and 27th Aves. Scenic Way betw. 25th & 26th Aves. So Van Ness betw. Market & Mission 18th St. betw. Guerrero & Folsom 25th, 26th, 27th Ave. betw. El Camino and Sea Cliff	6-1-51	0%	87,877.50	0	Major Street Spec. Rd. Imp
Totals Awarded and Expended During Fiscal Year			\$471,043.27	\$376,680.19	

CURRENT CONTRACT DATA 1950-1951

B-1 STREETS - Private Contracts Pd. Prop. Owners

Street or Subdivision	From	To	Impmts.	Contractor	Awarded	Completed Date or %	Contract Amount
Winston Dr. 19th Ave (W ₂)	20th Avenue	Winston Dr	C,P	Stonestown Cp.	6-22-49	60%	\$ 20,000
Crocker Amazon Highlands							
*Visitacion Ave	Bayshore	219' E'ly	S,C,P	Eaton & Smith	6-22-49	7-10-50	60,000
**Woolsey (S ₂)	University	Colby	C,P	Fay Impvt. Co	7-22-49	2- 2-51	2,235
Athens St Valmar Tr.	Peru Athens	Valmar Tr. 301' S.Peru	G,S	Eaton & Smith	8-19-49	1-12-50	5,250
*Colby St University Dwight	Woolsey Woolsey University	Dwight Dwight Colby	C,P	Fay Impvt. Co	11-30-49	6-16-50	3,000
*Bowdoin St	Woolsey	Dwight	C,P	Eaton & Smith	12- 7-49	99%	21,300
Bowdoin St	Dwight	Olmstead	S,C,P	Fay Impvt. Co	1- 6-50	7-14-50	8,100
*Leland Ave	Sawyer	W. Term.	S,C,P	Fay Impvt. Co	1-18-50	7- 7-50	12,300
Lakeshore Pk. Sub 4-Contr. 2					2- 1-50	10-19-50	8,000
Myra Way Reposa Way LaBica (E ₂)	Omar Way Myra Way N'ly Myra Way N'ly	LaBica E/L	S,C,P	Chas.L.Harney	3-15-50	8-21-50	12,000
*Pennsylvania	Mariposa	18th Street	S,C,P	Eaton & Smith	5-15-50	3-21-51	21,000
			C,P	Fay Impvt. Co	5-10-50	12- 1-50	7,200

Carver St	Mayflower	179' S'y	S,C,P	Eaton & Smith	6- 2-50	50%	9,092
Massasoit St	Franconia	Rutledge	S,C,P	Eaton & Smith	6-21-50	95%	18,000
Rutledge St	Peralta	Franconia					
Sherwood Forest			S	Lang Const. Co	7- 7-50	90%	8,200
Contr. 1							
Parkmerced Sub.			C,P	Eaton & Smith	7-21-50	95%	340,000
Athens St	Peru	Valmar Tr.					
Valmar Tr.	Athens	302' S.Peru	C,P	Fay Impvt. Co	7-26-50	1- 8-51	13,700
Kirkham Hts. Sub			S	Fay Impvt. Co	7-26-50	9- 8-50	13,960
3rd Street	N.of 26th St		P	West Coast Fast Freight Inc.,	7-26-50	9-29-50	1,000
*Harkness Ave	Rutland St	Sparta St	C,P	Bernal Const.	8-30-50	20%	7,300
Bradford St	Esmeralda	65' South	S	Sibley Grading	9- 1-50	4- 6-51	1,200
Farnum St	Moreland	31st Street	S,C,P	Fay Impvt. Co	9- 8-50	3-23-51	3,100
Roblnhood Dr	Lansdale	Sherwood For.	C,P	Fay Impvt. Co	9- 8-50	6-28-51	3,000
Lansdale Ave	Globe Alley	Sherwood For.	C,P	Fay Impvt. Co	9- 8-50	6-28-51	2,500
Connecticut St	22nd Street	250' N	S,C,P	Chas.L.Harney	10- 4-50	6- 5-51	10,500
**Sherwood Hts			S,C,P	Fay Impvt. Co	10- 4-50	6-28-51	38,600
5th Avenue	116' S Kirkham S. Term.		S,C,P	Williams & Burrows		1-30-51	10,500
Lakeshore Pk							
Sub. 4-Contr. 3			S,C,P	Chas.L.Harney	10- 6-50	99%	\$ 10,000
15th Ave (E½)	Lake St	Presidio	C,P	Eaton & Smith	10-11-50	99%	500

CURRENT CONTRACT DATA 1950-1951

B-1 STREETS Private Contracts (Cont'd)

Street or Subdivision	From	To	Impvts.	Contractor	Awarded	Completed Date or %	Contract Amount
Cambon Dr. & Cardenas Ave			Stairs	Starrett Bros & Eken	10-13-50	4-20-51 \$	700
Armstrong Ave	3rd Street	700' W'y	P	Fay Impvt. Co	10-18-50	4-23-51	3,150
Sherwood Forest Contr. 2			S	Lowrie Pav. Co	10-20-50	85%	10,000
*Bright St Shields St	Shields St Head St	Sargent St Orizaba St	S,C,P	Chas.L.Harney	11- 1-50	60%	23,600
Glenview Dr &Dawnview Dr			S,C,P	Chas.L.Harney	11-10-50	0%	18,400
*Head Street	Palmetto Ave	De Long St	S,C,P	Chas.L.Harney	11-15-50	60%	5,600
*Sherwood Hts Contr. 2			S,C,P	Fay Impvt. Co	11-29-50	6-28-51	7,500
Pioche St (S½)	Gambier St	145' W'y	C,P	Eaton & Smith	12-13-50	3-16-51	1,200
*Wayland St	Hamilton St	Bowdoin St	S,C,P	Chas.L.Harney	12-22-50	99%	5,000
*Elmira St	Helena St	Shafter Ave	C,P	Fay Impvt. Co	12-22-50	6-27-51	2,500
Amherst St	Felton	200' S'y	S	Fay Impvt. Co	1-10-51	2-20-51	5,500
*Brussels St	Mansell St	Ordway St	C,P	Fay Impvt. Co	1-17-51	6-15-51	5,500
Alemanly Blvd	Blk. 5846		S	Piombo Const.	2-16-51	3- 3-51	2,300
Victoria St	Alemanly Blvd	Palmetto Ave	S,C,P	Eaton & Smith	2-28-51	6-19-51	10,200
*Hamilton St	Dwight St	Woolsey St	S,C,P	Fay Impvt. Co	3- 2-51	30%	7,900

Stonestown Sub	S	Stonestown Cp.	3- 2-51	90%	25,000
*Olmstead St	S,C,P	Pay Impvt. Co	3- 9-51	80%	17,100
**Carver St (E $\frac{1}{2}$)	S,C,P	Eaton & Smith	3-16-51	50%	2,850
*Goettingen St	S,C,P	Bernal Constr,	3-16-51	40%	9,000
Cambon Dr & 19th Ave	Wall., Walk	Starrett Bros & Eken	3-21-51	4-20-51	2,500
*Burnham St	S,C,P	Pay Impvt. Co	3-23-51	60%	5,700
Colby St	S,C,P	Pay Impvt. Co	3-23-51	50%	12,800
*Bowdoin St	S,C,P	Pay Impvt. Co	3-28-51	20%	8,400
Ordway St	S,C,P	Pay Impvt. Co	3-30-51	0%	6,300
Ocean Ave (N $\frac{1}{2}$)	C	Chas.L.Harney	5-11-51	0%	800
Lake Merced Blvd. (San Mateo Co)	P	Henry Doelger	5-29-51	95%	20,853
Clayton & 17th	C,W	Lowrie Pav. Co	5-29-51	99%	1,200
Holloway Ave	S	Stonecrest Cp.	6-15-51	85%	1,300
Lake Merced School Site	S	M. J. Lynch	6-22-51	10%	58,500

\$752,813
\$672,909

Total Awarded during Fiscal Year

Total Value of Work done during Fiscal Year

*Remaining portions of street improved under Assessment Proceedings

**Remainder improved under Public Contract - City Pay

S = Sewers G = Grading P = Paving C = Curbs W = Sidewalk

CURRENT CONTRACT DATA 1950-1951

B-2 STREETS - Assessment Proceedings

Street or Subdivision	From	To	Impts.	Contractor	Awarded	Completed Date or %	Contract Amount
*Egbert Ave	Keith St	Jennings St	C,P	Fay Impvt. Co	12-17-48	9-18-50	\$ 4,899.00 (1,200.00)-
*Visitation (S $\frac{1}{2}$)	Bayshore Blvd	87' E'ly	C,P	Fay Impvt. Co	7-22-49	2- 2-51	817.14
*Colby St	Woolsey St	Dwight St					
University St	Woolsey St	Dwight St					
Dwight St	University St	Colby St	S,C,P	Eaton & Smith	12- 7-49	99%	14,270.40 (9,000.00)-
*Bowdoin St	Woolsey St	Dwight St	C,P	Fay Impvt. Co	1- 6-50	7-14-50	4,637.60 (900.00)-
*Leland Ave	Sawyer St	W'ly Term.	C,P	Fay Impvt. Co	1-27-50	10-19-50	4,721.50 (400.00)-
Quintara St	30th Ave	31st Ave	S,C,P	Chas. L. Harney	2-21-50	7-20-50	8,730.00 (2,400.00)-
Summit St	Thrift St	Margaret Ave	S,C,P	Eaton & Smith	3-22-50	1- 5-51	16,926.25 (7,000.00)-
Leland Ave (Xings)	Hahn St	Sawyer St	S,C,P	Fay Impvt. Co	4-19-50	10-19-50	4,406.15 (1,300.00)-
22nd St	De Haro St	Carollina St	C,P	Fay Impvt. Co	4-19-50	10-26-50	4,387.25 (3,700.00)-
*Pennsylvania	Mariposa St	18th St	C,P	Fay Impvt. Co	5-10-50	12- 1-50	3,103.00
25th St	Texas	Pennsylvania	S,C,P	Bernal Const.	5-31-50	1-16-51	13,381.80 (1,500.00)-

Jules Ave	Grafton Ave	Lakeview	S,C,P	Bernal Const.	5-31-50	5-7-51	21,987.25 (16,500.00)-
Bowdoin	Dwight St	(Xing)	S,C,P	Fay Impvt. Co	6-21-50	4-3-51	4,765.61 (2,100.00)-
Peru Ave	Vienna St	Athens St	S,C,P	E. J. Treacy	7-26-50	2-13-51	8,784.75 (5,000.00)-
*Athens St (W $\frac{1}{2}$)	Peru Ave	Valmar Ter.	C,P	Fay Impvt. Co	7-26-50	1-8-51	1,095.00 (500.00)-
*Harkness Ave	Rutland	Sparta St	C,P	Bernal Const.	8-23-50	20%	2,929.00 (1,500.00)-
Harkness Ave	Adler St	Rutland St	S,C,P	Bernal Const.	8-23-50	20%	6,454.80 (2,400.00)-
Golden G. Hts. (Paving Contr. 4)							
Peru Ave	Valmar Ter.	Moscow St (Intersection)	C,P	Chas. L. Harney	8-23-50	99%	46,261.60 (21,000.00)-
Trumbull St	Mission St	Davenport Lane	W'dn	Fay Impvt. Co	8-23-50	1-8-51	3,399.50 (1,300.00)-
*Bright St Shield St	Shields St Head St	Sargent St Orizaba St	C,P	Chas. L. Harney	11-1-50	60%	10,249.75 (6,500.00)-
Collins St (E $\frac{1}{2}$)	Anza St	25' North	W	Balliet Bros	11-10-50	1-23-51	7,600.00
Shields St	Bright St	Crossing	S,C,P	Chas. L. Harney	11-22-50	60%	3,257.40 (1,000.00)-
*Head St (W $\frac{1}{2}$)	Palmetto Ave	170' South	C,P	Chas. L. Harney	11-15-50	60%	3,060.50 (1,000.00)-
*Wayland St (N $\frac{1}{2}$)	Hamilton St	100' W'ly	C,P	Chas. L. Harney	12-22-50	99%	1,320.00 (900.00)-

CURRENT CONTRACT DATA 1950-1951

B-2 STREETS - Assessment Proceedings (Cont'd)

Street or Subdivision	From	To	Impts.	Contractor	Awarded	Completed Date or %	Contract Amount
*Elmira St (W $\frac{1}{2}$)	Helena St	125' N'y	C,P	Fay Impvt. Co	12-22-50	6-27-51	\$ 1,140.35 (850.00)-
Mansell St	Brussels St	Crossing	S,C,P	Fay Impvt. Co	1-17-51	6-29-51	3,822.00 (1,000.00)-
Rutledge St	Peralta Ave Franconia St	Intersection	S,C,P	Eaton & Smith	1-17-51	99%	4,011.80 (1,400.00)-
*Brussels St	Mansell	Ordway	C,P	Fay Impvt. Co	1-17-51	6-15-51	3,806.80 (1,800.00)-
*Goettingen St	Wilde Ave	Campbell Ave	C,P	Bernal Const.	1-28-51	40%	5,274.45 (2,900.00)-
Hopkins Ave	Burnett Ave	Corbett Ave	S	E.J.Treacy	2- 2-51	99%	2,761.00 (800.00)-
Olmstead St (Crossing)	University	Bowdoin St	S,C,P	Fay Impvt. Co	3- 2-51	60%	13,244.60 (3,200.00)-
*Olmstead St	University	Bowdoin St	C,P	Fay Impvt. Co	3- 9-51	60%	3,856.50 (2,200.00)-
Burnham St	25th Street	(Crossing)	S,C,P	Fay Impvt. Co	3- 2-51	60%	3,365.60 (1,300.00)-
*Hamilton St	Woolsey	Dwight	C,P	Fay Impvt. Co	3- 2-51	30%	4,865.45 (2,000.00)-

*Bowdoin St	Olmstead	Mansell St	C,P	Fay Impvt. Co	3- 2-51	60%	4,953.40 (2,700.00)-
*Burnham St	25th Street	Clipper St	C,P	Fay Impvt. Co	3-23-51	60%	1,972.50 (1,200.00)-
Dwight St	Bowdoin	Hamilton St	S,C,P	Fay Impvt. Co	3-23-51	60%	7,822.73 (2,800.00)-
Campbell Ave	Brussels St	Goettingen St	S,C,P	Bernal Const.	4-11-51	40%	9,045.20 (3,000.00)-
Total Awarded during Fiscal Year							\$200,797.62
Total Value of Work done during Fiscal Year							235,203.15

*Remaining portions of street under private contract

(-) Estimated amounts of City obligation, balance through assessment on property benefited.
City funds from Special Road Improvement Fund.

S = Sewers C = Curbs P = Paving W = Sidewalk

CURRENT CONTRACT DATA 1950-1951

B-3 STREETS - Public Contract-City Pay

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1950-1951	Fund
Fell St-Between Baker & Franklin Sts (Resurfacing) The Lowrie Paving Co	4- 5-50	8- 1-50	12,631.95	12,631.95	Major Str.
*La Bica Way (W $\frac{1}{2}$) Between Myra Way (S.L.) & 140 N (Curbs-Paving) Eaton & Smith	4-12-50	3-21-51	1,312.60	1,312.60	Spec. Road
Bowdoin St Between Woolsey St & 255 ft. S. (Fill) The Fay Improvement Co	7-14-50	8- 8-50	375.00	375.00	Water Dept.
Church St - 20th St to 22nd St Noe St - 20th St to 21st St (Reconstruction) Chas. L. Harney, Inc	9- 1-50	12-27-50	21,277.83	21,277.83	Spec. Rd. Imp.
24th St Widening Between Mission St & So. Van Ness - Fay Improvement Co	11- 1-50	2- 9-51	5,492.84	5,492.84	"
*Dalewood Way (N $\frac{1}{2}$) Between San Miguel Rancho Line & W. Term. (Curbs-Paving-Sewers) Fay Impvt. Co	11-29-50	99%	5,251.00	0.00	"
24th St-Fountain St & Hoffman Ave (Paving) The Fay Improvement Co	12- 8-50	0%	4,370.00	0.00	"
*Carver St (W $\frac{1}{2}$) Between Mayflower St & Bernal Hts. Blvd (Curbs-Paving) Eaton & Smith	3-16-51	0%	1,160.00	0.00	"

Parker Ave Between Anza & Turk Sts (Reconstruction) Eaton & Smith	5-25-51	10%	22,088.00	0.00	"
Byxbee Playground (Construction-Sidewalks) Arras Bros	6-8-51	99%	1,679.05	0.00	"
Total Awarded and Expended During Fiscal Year			\$ 61,693.72	\$ 41,090.22	

* Remaining portions of Streets improved under Private Contract

CURRENT CONTRACT DATA 1950-1951

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1950-1951	Fund
B-4 - STREETS - Car Track Removal					
Bryant St-Between 11th St & Army St (Removal of Tracks & Reconst. of Pavement) Chas. L. Harney Inc.,	1- 4-50	7-24-50	\$205,240.85	\$50,370.85	1947 St. Imp. Bond
San Jose Ave-From Diamond St to Ocean Avenue (Removal of Tracks & Reconstruction of Pavement) Lowrie Paving Co, Inc.	3-22-50	7-19-50	80,887.82	20,877.82	"
Sutter St-Between Market St & Fillmore (Removal of Tracks & Reconstruction of Pavement) Chas. L. Harney Inc.	5- 5-50	9- 1-50	149,977.56	128,302.56	"
Lincoln Way-Between Arguello Blvd & 48th Ave Sunset Blvd.-Lincoln Way Inter- Change (Removal of Track & Reconstruc- tion of Pavement) Eaton & Smith	6-21-50	3-29-51	334,279.76	334,279.76	"
Divisadero St-Between Geary & Sutter (Removal of Tracks & Reconstruction of Pavement) Lowrie Paving Co	6-30-50	8-24-50	8,578.84	8,578.84	1947 Str.Impr. Bd. Spec. Road Impr.
Jackson St-Between Fillmore & Presidio Presidio Ave-Betw. Jackson & California California Betw. 6th Ave & Lincoln Park (Removal of Tracks & Reconstruction of Pavement) Chas. L. Harney Inc.	7-28-50	12-29-50	137,695.60	137,695.60	1947 St. Impr. Bd. Spec.Rd. Impr.

Eighth St-Market to Mission						
Twelfth St-Market to Mission						
Twelfth St-S. Van Ness to Howard						
22nd St- S. Van Ness to Mission						
Castro St- Market to 18th St						
Otis St-Duboce to S. Van Ness						
(Removal of Track & Reconstruction of Pavement) Chas. L. Harney	8-25-50	2- 5-51	53,435.71	53,435.71	1947 St.Impr.Bd. Spec.Rd. Impr.	
Oak St-Between Fillmore & Stanyan						
Page St-Between Fillmore & Stanyan						
Stanyan St Between Oak & Carl						
Frederick St Between Stanyan & Arguello						
Broderick St Between Oak & Fell						
(Removal of Tracks and Reconstruction of Pavement) Piombo Construction Co.	12-13-50	76%	286,851.00	197,370.00	1947 St. Impr. Bd.	
Mission St From Excelsior to Co. Line						
(Removal of Tracks & Reconstruction of Pavement) Lowrie Paving Co	3-30-51	23%	249,492.00	48,875.00	(1947 St.Impr Spec.Rd.Impr (1947 Muni R'wy. Rehab.Fund	
Divisadero St From Page to Geary						
Divisadero St from Sutter to Sacramento						
Sacramento St from Fillmore to Arguello						
(Removal of Tracks & Reconstruction of Pavement) Eaton & Smith	4-27-51	34%	259,858.00	75,990.00	1947 St.Impr.Bd. Major Street	
Total Awarded & Expended During Fiscal Year			\$987,332.31	\$1,055,776.14		

CURRENT CONTRACT DATA 1950-1951

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1950-1951	Fund
C-TRAFFIC SIGNALS & CHANNELIZATION					
Market St-Between Castro & 10th St (Installation of a Traffic Signal System) R. Flatland	11-30-49	7-13-50	\$ 97,453.96	\$ 22,413.96	1947 St Imp. Bd.
Bush St & Pine Betw. Market & Presidio (Supplementary Traffic Signals) Abbott Electric Corp.	3-29-50	8-22-50	14,678.00	10,853.00	"
San Jose Ave & Bernal Ave at Randall Street & Others (Channelization and Signals) Chas. L. Harney Inc	5-31-50	12-15-50	<u>29,133.33</u>	29,133.33	Major Street Spec.Rd.Impr.
Harrison & Essex Sts & Folsom & Essex (Flashing Arterial Stop Signs) Globe Electric Works	8-2-50	10- 2-50	1,475.00	1,475.00	Spec.Rd. Impr
Ninth & Brannan Sts (Traffic Signals) Globe Electric Works	8-16-50	10- 2-50	1,924.50	1,924.50	"
Traffic Signals at Isolated Crossings (5th Contract) (Installation of Traffic Signals) R. Flatland	8-18-50	1-23-51	21,011.08	21,011.08	1947 St.Imp.Bd
Lombard St Betw. Franklin & Divisadero (Installation "No Left Turn" Neon Signs) R. Flatland	9- 1-50	10-19-50	3,505.00	3,505.00	Spec.Rd.Impr

19th Ave & Winston Drive (Installation Traffic Signals) R. Flatland	9-13-50	1-30-51	6,010.00	6,010.00	State Hwy Spec Road
Junipero Serra Blvd Betw. Ocean Ave & 19th Ave. (Channelization & Signals) Chas. L. Harney Inc.	9-20-50	5-16-51	87,069.85	87,069.85	1927 Blvd. Bond
Traffic Signals at Isolated Crossings (6th Contract) (Installation of Traffic Signals) R. Flatland	10-31-50	6-11-51	35,514.68	35,514.68	Spec.Rd. Impr.
Third St & Arthur Ave (Installation of Traffic Signals) R. Flatland	11- 3-50	5- 3-51	16,394.70	16,394.70	1947 St.Impr.Bd. Spec.Rd.Impr.
Clementina St at First & Fremont St (Installation of Traffic Signals) R. Flatland	12- 8-50	3- 5-51	15,454.20	15,454.20	State Hwy Major Street
Traffic Signals at Isolated Crossings (7th Contract) (Installation of Traffic Signals) Abbott Electric Corp.	12-20-50	99%	38,287.80	27,150.00	Spec.Rd. Impr.
Geneva Ave & Naples St (Installation of Pedestrian Push Button Stas.) R. Flatland	12-29-50	2- 8-51	625.00	625.00	"
Bayshore Blvd & Vistacion Ave (Traffic Control & Street Work) Fay Improvement Co	1- 3-51	2-19-51	1,273.75	1,273.75	"

CURRENT CONTRACT DATA 1950-1951

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1950-1951	Fund
C-TRAFFIC SIGNALS & CHANNELIZATION					
Market St- at Battery & Sansome St (Traffic Signals & Channelization) Lowrie Paving Co	3- 7-51	77%	\$ 29,501.54	\$18,000.00	Spec.Rd. Impr.
Richardson Ave at Baker & Chestnut St (Relocation of Traffic Signal and Island) R. Flatland	3-14-51	5- 1-51	3,500.00	3,500.00	"
Vermont St at 24th & 25th Sts (Traffic Signals) R. Flatland	3-21-51	5-29-51	13,380.90	13,380.90	State Hwy Major Street Spec.Rd. Impr.
Traffic Signals at Isolated Crossings (8th Contract) (Installation of Traffic Signals)	4-25-51	68%	27,210.00	13,725.00	Major Street
Mission & Otis Between S. Van Ness and Duboce Sts. (Traffic Signals & Channelization) Severin Electric Co	5-23-51	0%	21,845.57	0	1947 Str. Impr. Bd
Total Awarded and Expended During Fiscal Year			\$ 323,983.57	\$ 328,413.95	

D-1 - SEWERS - PIPE - Vitrified & Concrete					
Lake St Sewer System Section "C" Contract #1 (Construction Concrete Pipe Sewer) M & K Corporation	3-22-50	3-15-51	332,468.20	281,743.20	1947 St, Impr 1944 Sewer Bd.
18th Ave North of Vicente (Sewer Replacement) The Fay Improvement Co	5-31-50	8-16-50	5,091.29	5,091.29	General
Lake Merced Sewer System Section "E" (Construction Concrete Pipe Sewer) McGuire & Hester	8- 4-50	4- 5-51	123,086.64	123,086.64	1944 Sewer
Lake St Sewer System Section "C" Contract #2 (Construction Concrete Pipe Sewer) Chas. L. Harney Inc	8-11-50	99%	114,746.10	96,050.00	1944 Sewer
Lake St. Sewer System Section "A" Contract #5 (Construction Concrete Pipe Sewer) M & K Corporation	10-20-50	2-15-51	43,059.79	43,059.79	1944 Sewer Bd.
24th St Betw Fountain & Hoffman Ave (Reconstruction of Sewer) Arthur Wallgren	2-28-51	99%	6,241.50	3,600.00	General
17th Ave from Geary Blvd to Lake St (Construction of Pipe Sewer) M & K Corporation	5- 4-51	19%	156,651.00	25,075.00	General
Total Awarded and Expended During Fiscal Year			\$ 443,785.03	\$ 577,705.92	

CURRENT CONTRACT DATA 1950-1951

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1950-1951	Fund
D-2 - SEWERS _ CONCRETE (Monolithic)					
Lake Merced Sewer System Sect. "B" (Construction of Tunnel) (Fredrickson Watson Constr. Co.) Joint Venturers (M & K Corporation Piombo Construction Co	11-23-49	5-28-51	\$ 1,426,412.09	\$857,677.09	1944 Sewer Bd.
Jackson St Betw Drumm St & Battery St (Sewer Reconstruction & Track Removal) Chas. L. Harney Inc.	4-12-50	99%	121,177.70	105,680.00	1944 Sewer Bd. 1947 St.Imp.Bd.
7th St Sewer Extension at Channel St (Construction of Concrete Sewer) M.J. Lynch	6-17-50	10-11-50	25,316.22	21,491.22	1944 Sewer Bd.
Marin St Sewer Betw Illinois St & 3rd St (Construction of Sewer) Healy Tibbits Constr. Co	10-13-50	3-19-51	27,275.85	27,275.85	1948 Sewage Tr. Bd.
Phelan Ave Sewer-Ocean Ave & Judson Ave (Contract #2) (Construction of Sewer) Walter Lenkeit	10-18-50	3- 5-51	31,226.60	31,226.60	General
Southeast Collecting Sewers Sec. A-1 W (Influent Intercepting Sewer) Healy Tibbits Constr. Co	4-13-51	4%	246,495.00	7,650.00	1948 Sewage Tr. Bd.
Southeast Collecting Sewers-Section A-2 (Effluent, Intercepting, Misc. Sewers) M & K Corp	6-20-51	0%	473,315.00	0.00	"
Total Awarded and Expended During Fiscal Year			\$ 778,312.45	\$1,051,000.76	

E-1 - SEWAGE TREATMENT PLANTS

North Point Sewage Treatment Plant Bay Street at Grant Avenue (Construction)					
Joint Venturers (M & K Corporation { Fred J. Early, Jr. Co { Stolte Inc { Haas & Rothschild	11-28-48	96%	8,289,525.00	2,450,125.00	1944 Sewer Bond
North Point Sludge Treatment Plant Near Islais Creek (Construction)					
Joint Venturers (MacDonald Young & Nelson { Morrison-Knudsen Co	8-26-49	97%	4,486,000.00	2,458,285.00	1948 Sewage Tr. Bd.
North Point Sludge Main (Construction Pipe Line)					
Chas. L. Harney Inc	9-16-49	10- 9-50	370,729.73	68,979.73	"
North Point Sewage Treatment Plant Influent & Effluent Sewers (Construction)					
Chas. L. Harney Inc.	10-26-49	96%	1,039,903.00	660,875.00	"
Southeast Sewage Treatment Plant Near Islais Creek (Construction)					
Joint Venturers (Walsh Construction Co { Bates & Rogers Const. Corp. { J. H. Pomeroy	1-18-50	98%	2,132,118.00	1,360,425.00	"
Total Awarded and Expended During Fiscal Year			0.00	\$6,998,989.73	

CURRENT CONTRACT DATA 1950-1951

Description and Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1950-1951	Fund
E-2 MISCELLANEOUS					
Junipero Serra Blvd at Alemany (Construction of a Viaduct)	9-16-49	7-14-50	\$ 302,885.01	\$ 52,560.01	St. Highw.
Granite Construction Co					
Broadway Tunnel & Approaches Between Polk & Powell Sts (Construction of Tunnel)	2- 8-50	31%	5,253,552.35	1,774,545.00	1947 Str. Impr.
Morrison-Knudsen Co. Inc.					
Maintenance Yard at 2323 Army St (General Construction)	3- 3-50	83%	414,777.00	297,075.00	General
Biltwell Construction Co					
Maintenance Yard at 2323 Army St (Plumbing & Mechanical Work)	3- 3-50	78%	59,825.00	40,205.00	"
Jack Rosen					
Maintenance Yard at 2323 Army St (Electrical Work)	3- 3-50	49%	39,800.00	16,575.00	"
Enterprise Electric Co					
Marina Sewage Pumping Station (Fabrication & Installation of Trap Doors & Railings)	4-19-50	2-23-51	799.00	799.00	"
Star Iron Works					
Street Signs (New Type) Contract #6 (Installation)	5- 5-50	10-24-50	18,722.68	18,722.68	General Spec. Rd. Impr
Murlark Company					
Laguna Honda Home Steel Tank (Steel Water Storage Tank & Appur.)	5- 5-50	2-23-51	19,485.00	19,485.00	General
California Steel Products					

Log Cabin Sewage Treatment Plant (Construction) M. J. Lynch	6-23-50	99%	41,578.10	29,250.00	General
Richmond Sunset Sewage Treatment Plant (Repainting Ventilating Duct Work) Plasticcoat Co	6-28-50	10-19-50	1,941.40	1,941.40	"
Parker Ave Drainage System Extension (Test Borings) J. C. Grattan	7- 7-50	11-17-50	687.50	687.50	Spec. Rd. Impr.
Mission St Viaduct Over Alemany Blvd (Construction of Viaduct) Granite Construction Co	7-12-50	61%	348,218.00	185,895.00	Pub. Util. St. Highw.
Donahue Monument-at Battery, Bush & Market Sts. (Relocation) Adam Arras & Son	8-11-50	2- 1-51	10,425.22	10,425.22	1947 Str. Impr. Bd.
Phelan Beach Recreation Area (Improvement of Area) Chas. L. Harney, Inc.	9- 8-50	86%	142,771.00	110,080.00	1947 Rec. Bond
Parker Ave Drainage System Extension (Construction Drainage System) Casey & Case	10- 4-50	3- 2-51	39,277.80	39,277.80	Spec. Rd. Impr.
Lakeshore Park Pumping Station #3 (Construction Steel Platform) Adam Arras & Son	10-18-50	12-22-50	579.00	579.00	General
Stanley Dr Underpass Incl. Channelization of Junipero Serra Blvd. (Construction) Joint Venture { M & K Corporation { Eaton & Smith	11- 3-50	20%	445,881.10	70,210.00	St. Highw. Major St. 1947 Blvd. Bd

CURRENT CONTRACT DATA 1950-1951

Description & Contractor	Awarded	Completed Date or %	Contract Amount	Amount Expended 1950-1951	Fund
E-2 Miscellaneous (Continued)					
Street Name Plates and Block No. Plates Contr. #7 (Purchase)	11-20-50		\$ 16,077.45	\$ 16,077.45	Spec.Rd.Impr.
Paul Revere School Annex (Reconstruction of Retaining Wall)					
Chas. L. Harney, Inc	1- 3-51	3-22-51	10,921.00	10,921.00	S.F.Unified School Dist.
Air Raid Sirens (Emergency) (Erection)					
Adam Arras & Son	1- 5-51	2-28-51	1,510.69	1,510.63	General Disaster Corp.
Farmers Market (1st Contract) (Construction)					
Eaton & Smith	1-17-51	99%	104,427.80	83,520.00	General
Street Signs (New Type) Contract #7 (Installation)					
Bernal Construction Co	2- 2-51	0%	19,276.95	0.00	Spec.Rd.Impr.
Air Raid Sirens-Remote Control Equipt. Smith,Lindstrom & Duncan	2-28-51	5-18-51	3,480.00	3,480.00	General Disaster Corp
13th St Widening (Razing of Bldg. - 40 - 13th St)					
Lucey Concrete Cutting Co.	3-21-51	5-23-51	750.00	750.00	Spec. Rd. Imp
13th St Widening (Razing of Bldgs. Various Locations)					
Symon Bros. Wrecking Co.	3-21-51	5-23-51	5,640.00	5,640.00	"

Air Raid Sirens (B) At various Locations
(Installation)

Geo. F. Brayer	3-28-51	6-15-51	6,110.00	6,110.00	General Disaster Corp
Southeast Collecting Sewers Tunnels & Sewers (Test Borings) J. N. Pitcher Co	4-13-51	75%	9,816.35	0.00	1948 Sewage Tr.Bd.
Great Highway Concrete Half Bridge (Repairs)	4-27-51	6-19-51	1,876.00	1,876.00	Major Street
Emsco of S. F.					
Southeast Collecting Sewer In Islais Creek Channel (Marine Test Borings) J. N. Pitcher Co	6-13-51	0%	1,827	0.00	1948 Sewage Tr.Bd.

Total Awarded and Expended During Fiscal Year

\$1,169,552.86 \$2,798,197.75

APPENDIX 1

APPENDIX II
BUREAU OF ARCHITECTURE
REPORT OF ACTIVITIES

Showing all work completed, contracts under construction, and work in progress, and work under preparation - July 1, 1950 to June 30, 1951.

WORK COMPLETED

Board of Education

General Construction

Hillcrest Elementary School	\$ 653,551.27
Noriega Home School Unit	264,740.80
Santiago Home School Unit	232,828.00
Sunset Reservoir Home School Unit	214,763.81

Miscellaneous Alterations

Abraham Lincoln High School

Soil Bearing Test	\$ 4,798.43	
Load Bearing Test	1,710.00	
Moving 3 Portable Frame Classrooms	5,664.00	
Preparing Site for Soil Bearing Test	737.00	
		12,909.43

Bret Harte Elementary School (Test Boring & Soil Analyses)	365.70
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City College of S. F. (Conversion of Dairy Box)	3,224.00
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Herbert Hoover Junior High School (Boring Test Holes)	2,063.40
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Lawton Elementary School (Installation of Electric Water Heater)	607.00
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Patrick Henry Elementary School		
Boring of Test Holes	\$ 585.00	
Alterations to Plumbing and Electrical Work	8,399.00	
Demolition of Existing Wooden Structure	5,600.00	
		\$ 14,584.00
Modernization Projects		
Alamo Elementary School (Repaving Yard)		11,140.00
Cleveland Elementary School (Resurfacing Yard)		4,120.00
Galileo High School (Acoustical Work in Cafeteria)		5,972.00
Hawthorne Elementary School (Repaving Yard)		12,720.20
Horace Mann Junior High School (Alterations to Girls' Gym)		2,805.00
James Denman Junior High School (Locker Installations)		23,194.00
Jefferson Elementary School (Repair of Yard)		3,542.00
Lafayette Elementary School (Acoustical Work in Playroom)		5,792.00
Pacific Heights Elementary School (New Cafeteria and Alterations)		65,726.63
Raphael Weill Elementary School (Parapet Alterations & New Roof)		11,406.00
William McKinley Elementary School (General Repairs)		26,987.00
Jefferson, Guadalupe, Columbus, Argonne, Commodore Sloat, and Paul Revere (Alterations of Heating Plants)		33,380.79
Commerce, George Washington & Mission (Acoustical Work in Cafeterias)		7,334.00
		\$ 1,613,757.03

Department of Public Health

San Francisco Hospital		
Nurses Home Repairs, Electrical	\$	20,186.86
Isolation Wing Repairs		34,008.24
Isolation Nurses Home, Replace		
Water Steam Heating		17,468.00
Service Feeder Alterations and		
new Steam Turbine Generating Units		109,207.39
Miscellaneous Alterations for the		
Chemical Pathological Building		16,377.00
Laguna Honda Home		
Repairs on Electric Generating Set		2,286.00
Relining Boiler with Fire Brick		4,026.00
Interior Painting of Stairways, etc.,		10,230.00
Miscellaneous Repairs on Elevators		1,385.00
Install Acoustical Tile in Corridors		2,389.00
Interior Painting in Hospital Ward		7,673.00
Health Centers		
Aleman Health Center		6,115.20
Marina North Beach Health Center		7,869.00
Hassler Health Home		
Porch Deck Covering of Misc. Bldgs.		8,566.00
Interior Painting of Male & Female		
Employees Dormitories		4,823.00
	\$	252,609.69

Recreation and Park Department

Legion of Honor		
Landscaping of Courts	\$	6,967.58
DeYoung Memorial Museum		
Bronze Lettering		1,230.00
Carpenter Shop Addition		16,499.76
	\$	24,697.34

Fire Department

Miscellaneous Alterations		
Engine No 27		
(Additional Lockers)	\$	1,925.00
Jones Street Tank		
(New Copper Cornice)		6,577.00
Fire Department Garage		
(Basement of City Hall)		8,525.00
		17,027.00

Police Department

General Construction	
Mission Police Station	\$ 147,096.11
Miscellaneous Alterations	
Pistol Range Partition	7,569.00
Hall of Justice Paging System	1,137.97
	\$ 155,803.08

Juvenile Court

Youth Guidance Center	
Court Room Cabinet Work	\$ 4,354.00
Wood Shelving	1,037.00
General Construction Phases I&II	2,150,999.60
Mechanical Phases I & II	700,403.93
Electrical Phases I & II	172,803.17
	\$ 3,029,597.70

Public Library

General Construction	
Parkside Branch Library	\$ 132,060.95
Potrero Branch Library	75,290.35
	\$ 207,351.30

Civic Center

City Hall	
Jury Room Alterations	\$ 15,559.00
General Repair & Cleaning Exterior	34,935.51
Law Library Storage & Court Room Alter.	25,770.00
Alterations, Reproduction Room 50	13,513.05
Controller's Office Alterations	2,710.00
Roof Pigeon Screens	2,100.00
Alterations to Exhaust System of	
Reproduction Room 50	488.00
Roofing Interior Light Courts	2,286.00
Civic Auditorium	
Exterior Painting & Steam Cleaning	22,340.00
Metal Covering and Repairing Doors	2,675.00
	\$ 122,376.56
Total Work Completed	\$ 5,423,219.70

CONTRACTS UNDER CONSTRUCTION

Board of Education

		Percentage Completed
1948 Bond General Construction		
Abraham Lincoln High School	\$ 3,649,412.00	05%
Fremont Elementary School	823,963.39	80%
Washington High School	217,033.00	10%
Hillcrest Elementary Units 2 & 3	255,140.00	10%
Miraloma Elementary School	990,225.50	10%
Patrick Henry Elementary School	728,154.00	05%
Sunset "A" Elementary School	1,282,891.00	05%
John O'Connell Trade School	1,577,338.50	80%
Ulloa Elementary School	906,344.31	65%
Miscellaneous Alterations		
Hillcrest Elementary School (Moving 8 Portable Classrooms)	27,069.00	05%
Mission High School (Replace Hot Water Tanks)	10,990.00	06%
Noriega Home School Unit (Free Corners of Marble Partitions)	147.00	05%
Silver Avenue Elementary School (Site Preparation)	36,750.00	50%
Modernization Projects		
Aptos Junior High School (Concrete Stairway)	3,987.00	75%
Daniel Webster Elementary School (Fire Repairs)	48,933.00	10%
Frank McCoppin & Sutro Elementary (New concrete Fire Escapes)	24,203.00	05%
Mission High School (Installation of Acoustical Tile)	3,772.00	02%
Grant, Parkside, Taylor, Washington Irving, Emerson & McKinley Schools (Conversion of Heating Plants)	55,941.00	03%

Repave Yards at following Schools

Alvarado School	\$	25,369.00	02%
Aptos Junior High School		8,689.00	05%
Farragut Elementary School		5,368.00	05%
Monroe Elementary School		2,732.00	05%
Francis Scott Key Elementary School		9,900.00	05%
Madison Elementary School		1,855.00	05%
Winfield Scott Elementary School		10,754.00	02%
Sunnyside Elementary School		10,600.00	02%
Everett Junior High School		26,533.00	05%
Sanchez Elementary School		18,563.00	02%
John Muir Elementary School		5,069.00	02%
James Lick Junior High School		21,840.00	02%
Kate Kennedy Elementary School		7,173.00	02%
Edward Robeson Taylor Elementary		13,757.00	02%
Fairmount Elementary School		13,355.50	02%
West Portal Elementary School		25,500.00	02%
Garfield Elementary School		12,567.00	02%
Portola Junior High School		51,028.00	01%

Resilient Flooring at the following Schools

Kate Kennedy Elementary		10,256.00	25%
Bryant Elementary School		10,628.00	25%
Washington Irving Elementary School		9,586.00	02%
Jean Parker Elementary School		12,785.00	02%
Columbus Elementary School		11,672.00	02%
Parkside Elementary School		16,497.00	02%
Redding Elementary School		13,472.00	02%
Grant Elementary School		9,686.00	02%
Laguna Honda Elementary School		12,967.00	02%
Spring Valley Elementary School		15,513.00	02%

Interior Painting at the following Schools

Mission High School		57,532.00	20%
John Muir Elementary School		12,908.00	28%
Guadalupe Elementary School		11,032.00	02%
Hawthorne Elementary School		13,245.00	02%
Spring Valley Elementary School		10,465.00	02%
Glen Park Elementary School		11,733.00	02%
Grattan Elementary School		10,858.00	00%
Columbus Elementary School		9,600.00	00%
Aptos Junior High School		29,054.00	02%

\$11,202,435.20

Department of Public Health

San Francisco Hospital		
Modernize 1 Hydraulic Elevator	\$ 4,425.00	30%
Replace Elevator Equipment T.B.		
Wing of Isolation Building	30,099.60	02%
Surgical Suite Remodeling of		
Sink & Countertop Assemblies	1,169.20	90%
	\$ 35,693.80	

Recreation and Park Department

DeYoung Memorial Museum		
Roof Repairs	\$ 5,115.00	02%
Legion of Honor		
New Concrete Vent Duct Housings	2,516.00	70%
Achenbach Wood Cabinets	5,778.00	03%
	\$ 13,409.00	

Fire Department

General Construction		
Fire Engine No. 30	\$ 204,654.21	90%
Park Merced Fire House (Held up by NPA)	194,692.00	00%
Miscellaneous Alterations		
Painting and New Lighting System		
City Hall Office	6,897.00	02%
	\$ 406,243.21	

Police Department

San Francisco County Jail		
Roofing of Men's Building	\$ 10,439.00	01%

Juvenile Court

Youth Guidance Center		
General Construction Phase III	\$ 716,415.59	80%
Landscape Work Phases I, II and III	8,322.00	20%
Paper Holder Installation	1,397.00	95%
Safety Detention Screens	9,244.00	02%
	\$ 735,378.59	

Civic Center

Civic Auditorium		
Interior Tile & Terrazzo Work	\$ 59,941.00	01%
Flagpole Repairs	814.00	50%
Basement Plumbing	3,865.00	02%
Roof Repairs	9,451.00	95%
	\$ 74,071.00	

Total Contracts Under Construction	\$12,477,669.80	
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WORK UNDER PREPARATION

Board of Education

1948 School Bond Issue

Plans & Specifications Completed

Sunnydale Elementary School (Spencer & Ambrose)	\$ 1,250,000
Bret Harte Elementary School (Hobart & Kerr)	1,173,320
Silver Avenue Elementary School (W. D. Peugh)	846,000
Ocean View Heights Home School (Cantin, Cantin & Page)	386,555
	\$ 3,655,875

Working Drawing Stage

Lakeside Elementary School (Clarence W. Mayhew)	\$ 864,300
Twin Peaks Elementary School (Kirby & Mulvin)	439,000
Douglas Elementary School (John L. Reid)	633,000
San Miguel Elementary School (Mario J. Ciampi)	671,200
Commodore Stockton Elementary School (Angus McSweeney)	952,320
Delta & Wilde Home School Unit (Alfred W. Johnson)	307,192
Girls' High School Addition (Bliss & Hurt, Trudell & Berger)	1,200,000
City College of San Francisco (Milton T. Pflueger)	2,256,105
	\$ 7,323,117

Preliminary Drawing Stage

Sunset "B" Elementary School (Stone & Mulloy)	\$ 934,162
Southeast Junior High School (Gardner A. Dailey)	1,987,712
Sunset Junior High School (Thomsen & Wilson)	2,687,000
Candlestick Cove Elementary School (Wurster, Bernardi & Emmons)	993,856
Herbert Hoover Junior High School (Ernest J. Kump)	3,197,000
Ridgepoint No. 3 Elementary School (Kent & Hass)	998,374
Burnett Elementary School (Meyer & Evers)	745,392
Starr King Elementary School (Blanchard, Maher & Paulus)	903,506
Lake Merced Elementary School (John L. Reid)	900,000
	\$13,347,002

School Bond Modernization Program

Andrew Jackson Elementary (Miscellaneous Alterations)	\$ 60,000
Emerson Elementary School (Miscellaneous Alterations)	13,045
Guadalupe Elementary School (New Cafeteria)	60,000
Jefferson Elementary School (Miscellaneous Alterations)	40,000
Balboa, Mission & Portola (New Steam Tables & Service Lines)	45,000
Commodore Sloat Elementary School (Repave Yard)	45,000

APPENDIX II

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Washington High School (Repave Yard)	\$ 55,000
Marina Junior High School (Repave Yard)	97,000
22 Miscellaneous Schools (Resilient Flooring)	176,000
	\$ 591,045
Miscellaneous Alterations	
City College of San Francisco (Air Conditioning in Laboratory)	50,000
	\$24,967,039
Department of Public Health	
San Francisco Hospital	
Receiving & Isolation Nurses Home	
Fire Escapes	\$ 7,500
Paint Kitchen	4,000
Surgical Suite Remodeling	122,000
Alters. required by Fire Dept. (Pending receipt of W.O.)	100,000
Pharmacy Floor	5,000
Maternity Ward-Nursery Air Conditioning	15,000
New Boilers	61,000
Sunset Community Health Center	100,000
Laguna Honda Home	
Proposed Infirmary Remodeling	250,000
Remodel Coffee & Tea Urn Area	48,000
Install various Fire Doors	6,000
Replace Plumbing Fixtures in Various Toilet Rooms	16,000
	\$ 734,500
Fire Department	
New Construction	
Engine No. 29	\$ 161,000
Engine No. 10, Fire College, Drill Tower	500,000
	\$ 661,000
Recreation and Park Department	
DeYoung Memorial Museum	
Remodel 4 Antique Rooms	\$ 30,000
Case Work and Sheathing 15 Galleries	20,000
	\$ 50,000

Civic Center

Civic Auditorium		
Interior Repair Work	\$	20,000
Rehabilitation of Electrical System		103,700
Proposed Exhibition Hall		1,500,000
Modernize Mens Toilets and Tile		15,000
Paint Auditorium Interior		17,000
City Planning Remodeling Third Floor		9,500
	\$	1,665,200
Juvenile Court		
Youth Guidance Center		
Supplementary Items Mechanical & Electrical Work	\$	12,500
Fence Reinforcing		3,800
Additional Landscaping		5,000
Supplementary Items (Iron Work)		8,000
Supplementary Items (General Construction)		12,500
	\$	41,800
Public Library		
New Construction		
Marina Branch	\$	100,000
Excelsior Branch		125,000
	\$	225,000
Public Works		
Asphalt Yard Reconstruction	\$	35,000
Miscellaneous		
Hospitality Alterations	\$	19,500
Traffic Court - Otis Street		225,000
Registrar of Voters Warehouse		6,000
S. F. County Jail Roofing		11,500
Auto Shop No. 1 Demolition		8,500
Lake Merced Pumping Station (Architectural Design only)		
	\$	270,500
Total Work Under Preparation		\$28,650,039

RECAPITULATION

Work Completed

Board of Education	\$ 1,613,757.03
Public Health	252,609.69
Recreation and Park	24,697.34
Fire Department	17,027.00
Police Department	155,803.08
Juvenile Court	3,029,597.70
Public Library	207,351.30
Civic Center	122,376.56

\$ 5,423,219.70

Contracts Under Construction

Board of Education	\$11,202,435.20
Public Health	35,693.80
Recreation and Park	13,409.00
Fire Department	406,243.21
Police Department	10,439.00
Juvenile Court	735,378.59
Civic Center	74,071.00

12,477,669.80

Work Under Preparation

Board of Education	\$24,967,039.00
Public Health	734,500.00
Fire Department	661,000.00
Recreation and Park	50,000.00
Civic Center	1,665,200.00
Juvenile Court	41,800.00
Public Library	225,000.00
Public Works	35,000.00
Miscellaneous	270,500.00

28,650,039.00

Grand Total \$46,550,928.50

SEWAGE PUMPING STATION CAPACITIES, ETC.

Name of Location & Station	Units	Type	Size of Pump Discharge Inches	Actual Total Head Ft.	Actual Capacity G.P.M. Each	Rated Horse Power	Rated Voltage	Rated Speed R.P.M.	Year Built	Approx. Contract Cost	Sewage is Pumped into
Marina nr Casa Way	4	Horizontal	10	70	4350	100/60	440	870/695	1937	\$140,000	N Pt. Outfall
Park Merced	1	Single Stage	10	34	2600	30	440	870	1944	60,000	from Pierce Eucalyptus Dr.
	2	2-Horizontal	6	131	1800	50	440	1170			Sewer from Stanley St.
Lake Merced Blvd.		Pumps in Series		144	2500						Diversion
Commercial St. nr Drumm St.	3	Vertical	6	20	2100	25	220	870	1905	20,000	N. Pt. Main
	1	Single Stage							1908	10,000	from District nr. Lower
Sea Cliff	2	Horizontal	4	29	1050	15	Engine Driven	1600	1935	3,550	Market St.
#2 nr Sea Cliff Drive	1	Single Stage	4	100	650	25	220	1750	1945		Richmond-Sunset Sewer Tunnel at 25th Ave.
Vicente at Gt. Highway	2	Pumping unit 2-Horizontal	5	140	1400	40	220	1150	1940	57,500	& Lake St.
	6	Single Stage	6	50	900	25	230	870	1928	4,500	Sunset Interceptor from Dist. nr Sloat Blvd. & Gt. Hwy.
Fitzgerald nr Griffith St.	* 1	Vertical	4	47	350	15	220	1750		20,000	Bayview Main from Shore
Sea Cliff #1 nr Sea Cliff Dr.	1	Single Stage	4	54	460	15	220	1165		2,660	Area
	* 2	Vertical	4	51	530	15	220	1150	1929	1,750	Sea Cliff Sta. #2 from China Beach Area
-Pine Lake nr Crestlake & Wawona Drs	* 1	Vertical	3	57	170	5	220	1750	1944	1,500	Sunset Interceptor from Pinelake Park
Hyde St. at Jefferson	2	Single Stage	4	29	310	5	220	860	1948	44,500	N. Pt. Outfall with from Beach St. forcemain
Lakeshore pk.-Lake Merced Blvd.	2	Vertical	5	96	1300	50	440	1150	1947	35,000	Sewer from Stanley St. Diver'n
LaPlace Canyon at Portola Dr.	* 2	Vertical	4	59	360	10	220	1755	1949	8,250	O'Shaughnessy Blvd.
Fulton St.	2	Single Stage	5	55	800	20	220	900	1950	90,000	46th Avenue at Fulton St.

-Temporary station. *Submerged pump. All pumps are centrifugal type, motor driven, unless otherwise noted.

TABLE I
SEWAGE PUMPING STATION DATA

	Marina	Commercial	Sea Cliff #1	Sea Cliff #2		
Drainage, Area, Acres	1,125	92½	4	83.4		
Average Lift, feet	38	20	49	94		
Light & Auxiliary power % of total KWH	2.4	13.4	Negl.	10.3		
Max. Pumping per day	164	188				
% of yearly average						
KWH per million foot	5.2	6.8	10.9	6.6		
gallons pumped (A)	61%	47%	29%	48%		
Pumping efficiency (3.15/A)						
	Millions Gallons Pumped	Million Gallons Pumped	Power KWH	Million Gallons Pumped	Power KWH	
July 1950	175.6	34,858	21.40	3,250	3.85	2,700
August	173.6	32,900	21.23	3,260	3.86	2,840
September	174.3	35,310	19.14	3,040	4.21	2,890
October	184.3	37,520	21.76	3,390	4.50	3,292
November	188.2	38,350	23.01	3,672	3.91	2,960
December	197.0	39,130	25.58	4,130	5.54	3,520
January 1951	203.0	40,420	26.21	4,296	5.56	3,750
February	184.8	36,490	26.19	4,002	5.13	3,710
March	195.8	38,030	25.37	3,900	4.68	3,330
April	184.4	36,660	21.10	3,280	4.66	3,190
May	187.5	38,340	21.45	3,304	5.02	3,280
June	126.9	29,340	22.57	3,464	6.20	4,080
Total	2175.4	437,348	275.01	42,988	57.12	39,522

TABLE II
SEWAGE PUMPING STATION DATA

	Parkmerced	Vicente	Fitzgerald	Pine Lake
Drainage, Area, Acres	212	51.4	30	3
Average Lift, Feet	123	56	48	56
Light & auxiliary power % of total KWH	7.6	Negl.	Negl.	Negl.
Max. Pumping per day				
% of yearly average	205	6.3	7.0	4.2
KWH per million foot gallons pumped	6.5			
Pumping efficiency	49%	47%	45%	75%
	Million Gallons Pumped	Power KWH	Million Gallons Pumped	Power KWH
July 1950	26*	2,400	4.07	1,600
August	2.91*	3,200	3.83	1,440
September	16.89	13,130	3.83	1,440
October	16.80	13,100	3.78	1,420
November	15.63	13,330	4.21	1,640
December	18.09	14,340	4.20	1,600
January 1951	16.83	13,590	4.41	1,620
February	11.42	10,240	4.33	1,500
March	11.39	10,210	4.55	1,680
April	11.70	10,560	4.06	1,600
May	11.20	10,150	4.08	1,560
June	10.01	8,870	3.81	1,480
Total	143.13	123,120	49.16	18,580
			36.91	12,310
				2.41
				57.2

*Bypassed 54 days during construction Parkmerced sewer tunnel
July and August 1950.

TABLE III

SEWAGE PUMPING STATION DATA

	Hyde	Fulton	Lakeshore	La Place
Drainage, Area, Acres	14	82	152	40
Average Lift, feet	29	56	96	59
Light & auxiliary power % of total KWH	45	10.3	neg.	neg.
Max. Pumping per day % of yearly average	8.0	6.1		
KWH per million foot gallons pumped	36%	52%		
Pumping efficiency				
	Million Gallons Pumped	Power KWH	Million Gallons Pumped	Power KWH
July 1950	.40	170		
August	.30	140	2.74	1,040
September	.37	156	2.83	1,130
October	.30	139	2.44	1,040
November	.40	172	2.98	1,160
December	.69	280	2.90	1,120
January 1951	.73	279	4.55	1,860
February	.44	180	3.58	1,180
March	.41	180	2.93	1,120
April	.34	150	3.23	1,320
May	.40	166	2.78	1,050
June	.37	160	2.90	1,080
			2.02	790
Total	5.15	2,172	35.88	13,690

Pumping not sufficient to determine accurate data.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

Cost of Operation

Fiscal Year 1950-1951

Item of Expenditure	Total Plant Operation	Sewage Treatment with Chlorination	Sunset Pumping Plant	Sludge Disposal Conditioning & Filtration	Sewage Treatment without Chlorination
Permanent Salaries	\$ 63,684	\$ 43,164	\$ 7,954	\$ 13,586	\$ 38,126
Holidays	1,063	697	132	224	614
Overtime	20	13	3	4	12
Temporary Salaries	2,018	1,336	252	430	1,176
Wages	16,185	10,716	2,022	3,447	9,436
Contractual Services	14,746	9,764	1,841	3,141	8,597
Heat, Light & Power	16,312	11,691	3,846	775	10,277
Materials & Supplies	28,571	24,182	905	3,484	5,165
Totals	\$142,589	\$101,563	\$16,955	\$ 25,071	\$ 73,403
Richmond & Sunset Flow (gravity)	2,826 MG				
Sunset Flow (Pumped)	1,509 MG				
	4,335 MG				
Cost of Operation per MG	\$32.89 for 4,335 MG	\$23.43 for 4,335 MG	\$11.24 for 1,590 MG	\$5.78 for 4,335 MG	\$16.93 for 4,335 MG
Estimated cost per capita (Based on 230,000 population)	\$0.62 per year				

5,643 cu yd filter cake estimated value \$26,300 delivered to City Parks during year for use as fertilizer.

The Sunset Pumping Plant was shut down during storms in order to avoid handling excessive quantities of sand in the sump.

Additional expenditures	
Painting	\$2,716
Office Engineering	328
Equipment	482
Total	\$3,526

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 1 - SEWAGE TREATMENT DATA

Fiscal Year 1950-1951

Month	Flow, Million Gallons		Days By-Passed		Rain Inches	*Susp. Solids, ppm		5-Day BOD, ppm	
	Gravity	Pumped	Flow	Pumped Flow		Raw	Eff	Raw	Eff
July 1950	205.8	141.1	0.1	0.1		350	97	340	185
Aug	201.3	141.7				340	93	290	150
Sept	186.7	151.8				370	99	290	155
Oct	204.9	131.6	0.3	5.7	2.99	310	125	275	185
Nov	247.7	110.6		10.0	5.35	265	95	250	145
Dec	272.8	94.3		14.0	5.86	295	140	195	120
Jan 1951	293.7	106.1		10.6	3.86	235	91	215	135
Feb	257.4	101.7		7.5	3.09	240	96	240	160
Mar	244.2	141.8		4.3	1.45	245	105	260	160
Apr	237.8	138.8		1.6	.75	290	97	270	150
May	251.8	115.9		5.5	.66	250	95	205	120
June	222.1	134.0				275	98	275	155
Total	2826.2	1509.4	0.4	59.3	24.01				
Wt Avg**						290	105	260	150

By-Passing: Pumped flow - 59.3 days, rain.

* Suspended solids by Gooch crucible method. Raw sewage sampled after mechanical bar racks

** Weighted averages Calculated from monthly total flows.

RICHMOND SUNSET SEWAGE TREATMENT PLANT

TABLE 1 - SEWAGE TREATMENT DATA (Cont'd)

Month	Fiscal Year 1950-1951									
	Alkalinity as CaCO ₃ ppm		Chlorides, ppm	Sewage Temp of	Screen- ings cu ft	** Grease Gallons	Sand, cu yd Pre-Treat set	Chlorination lb		
	Raw	Eff	Raw	Eff				Pre	Post	
July 1950	205	200	82	81	70	27900	143	54	28960	
August	200	195	81	78	74	27900	158	50	29050	
September	205	200	75	78	74	27000	156	53	28480	
October	180	185	73	77	73	27900	213	86	25470	
November	150	145	65	63	71	27000	284	210	21330	
December***	145	140	58	57	64	18900	311	183	20720	
Jan. 1951 ***	150	160	59	60	63	27900	263	201	23160	
February***	175	190	60	66	63	25200	262	157	23980	
March	180	190	60	66	65	27900	284	143	28070	
April	190	190	69	74	67	27000	179	123	30930	
May	180	180	78	75	68	27900	157	167	29030	
June	185	180	71	72	70	27000	127	93	30620	
Total						319500	2547	1459	319800	
Wt. Avg ****	180	180	69	71	69	8610				

* Removed by Pre-Treatment bar racks only; screenings from Sunset sump not included

** Approximate removals from grit-grease tanks; additional removals in Mixing and Sedimentation Building not included.

*** Effluent sample composited by hand in proportion to flow.

Pre-Chlorination - 30 lbs. per million gallons

Post-Chlorination - 9 AM to 6 PM, 100 lbs per million gallons

6 PM to 9 AM, 80 lbs. per million gallons

No post-chlorination when Sunset flow by-passed.

TABLE II - SLUDGE TO DIGESTER AND GAS PRODUCTION

Fiscal Year 1950-1951

Month	M Gallons	% Total Solids	Raw Sludge to Digester Dry Sol- ids M lb	% Volatile	Volatile M lb	Metered Gas Production To Boiler	-M cu ft To Waste	Digester Temp F
July 1950	2,470.7	4.19	869.3	82.4	716.3	3,145	2,532	92
August	2,430.3	4.07	831.0	81.1	673.9	2,595*	3,412	93
September	2,597.3	4.21	918.3	78.3	719.0	**	3,226	93
October	1,891.9	4.12	654.9	80.2	525.2	**	1,839	92
November	1,632.3	3.96	542.9	80.9	439.2	**	1,021	92
December	1,567.3	4.20	553.5	75.7	419.0	**	944	87
January 1951	1,768.6	3.84	570.5	80.2	457.5	**	816	91
February	1,836.5	3.75	578.6	78.0	451.3	**	1,192	90
March	2,167.8	3.78	687.9	80.5	553.8	**	1,516	90
April	2,172.9	4.21	768.0	83.2	639.0	**	2,210	92
May	2,118.4	3.87	688.5	82.0	584.6	**	2,778	93
June	2,266.8	3.80	723.4	83.4	603.3	**	2,473	95
Total	24,920.8	4.00	8,386.8		6,762.1	29,349****	24,013	53,362*****
Wt.Avg.***				80.5				92

* Meter inoperative; estimated figure part of month.

** Meter inoperative; no parts available for repair

*** Based on accumulated totals for year. All raw sludge computations based on weight of 8.40 pounds per gallon.

**** Estimated figure for year.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT
TABLE III - DIGESTED SLUDGE TO ELUTRIATION

Fiscal Year 1950-1951

Month	Sludge, Thousands of Gallons		% Total Solids		Dry Solids, Thousands of lb	
	From Primary	From Secondary	Total	From Primary	From Secondary	Total
July 1950		319.8	319.8	4.67	125.5	125.5
August		364.5	364.5	4.87	149.3	149.3
September		83.2	83.2	4.66	32.6	32.6
October		537.5	537.5	3.67	165.5	165.5
November		280.3	280.3	3.32	78.2	78.2
December		184.7	184.7	6.26	97.1	97.1
January 1951		324.1	324.1	6.47	176.1	176.1
February		374.3	374.3	7.07	222.3	222.3
March		317.9	317.9	7.80	208.4	208.4
April		499.2	499.2	7.07	296.4	296.4
May		470.7	470.7	7.56	298.7	298.7
June	621.3		621.3	4.06	211.9	211.9
Total	621.3	3,756.2	4,377.5		1,850.1	2,062.0
Wt Avg*				4.06	5.76	5.51

* Weighted averages based upon accumulated yearly total and sludge weights of 8.55 lb. per gallon for net sludge and secondary sludge; 8.40 lb. per gallon for primary sludge.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE 3 - DIGESTED SLUDGE TO ELUTRIATION - Cont'd.

Fiscal Year 1950-1951

Month	From Primary	% Volatile From Secondary	Net	Volatile, Thousands of lb From Primary	From Secondary	Total	Avg Alk as CaCO ₃ , ppm
July 1950		61.1	61.1		76.7	76.7	1,860*
Aug		60.8	60.8		90.8	90.8	1,940*
Sept		61.1	61.1		19.9	19.9	1,800*
Oct		60.0	60.0		99.4	99.4	1,620*
Nov		57.6	57.6		45.2	45.2	1,560*
Dec		58.8	58.8		57.1	57.1	645
Jan 1951		57.6	57.6		102.4	102.4	660
Feb		56.7	56.7		126.0	126.0	500
Mar		56.7	56.7		118.1	118.1	630
Apr		56.9	56.9		168.6	168.6	750
May		57.8	57.8		172.7	172.7	830
June	58.9		58.9	124.8		124.8	1,410**
Total	58.9	58.2	58.3	124.8	1,076.9	1,201.7	
Wt Avg***							1,180

* No elutriation between digesters during transference of sludge.

** Drawing from primary digester.

*** Based upon accumulated total for year.

RICHMOND-SUNSET SEWAGE TREATMENT PLANT

TABLE IV - VACUUM FILTER OPERATION

Fiscal Year 1950-1951

Month	Gallons	% Total Solids To Filters	Filterate	Solids M lb	% Volatile	Volatile M lb	Ash M lb	Alk ^{as} CaCO ₃ , ppm
July 1950	645.5	4.53	0.21	244.1	61.3	149.6	94.4	400
August	743.7	4.68	0.22	357.3	61.0	175.4	112.2	430
September	630.4	4.50	0.32	331.7	61.2	141.8	89.9	450
October	436.3	5.02	0.34	176.4	59.4	104.2	71.2	420
November	293.7	5.15	0.17	128.1	58.0	74.3	53.8	370
December	163.6	5.36	0.34	71.8	57.4	41.2	30.6	355
January 1951	234.4	5.90	0.32	116.2	56.4	65.5	50.7	333
February	244.1	6.16	0.25	127.6	55.6	70.9	56.7	325
March	255.3	6.42	0.21	139.1	54.9	76.4	62.7	340
April	363.9	6.37	0.16	188.0	56.2	105.7	82.4	370
May	348.2	6.14	0.15	189.3	57.3	108.5	80.9	375
June	354.3	5.71	0.15	171.9	58.1	99.8	72.0	440
Total	4704.4			2070.7		1213.4	857.5	
Wt Avg *		5.21	0.24		58.6			355

* Based on accumulated totals for year, and sludge weight of 8.55 lb per gallon.

TABLE IV VACUUM FILTER OPERATION (Cont'd)

Fiscal Year 1950-1951

Month	lb FeCl ₃	%FeCl ₃ on Solids	Hours Filter Operated	* Filters Oper- ating	lb Solids Per hr	lb Solids Filter Per hr.	Filter Cake %Water	Filter Cake M lb	Fil- terate M lb Per hr	Filter Cake cu yds
July 1950	6730	2.76	158.01	2.0	1540	3.85	71.6	857.5	29.3	740
Aug	8590	2.99	185.63	2.0	1550	3.88	72.8	1057.6	28.5	910
Sept	7170	3.10	169.04	2.0	1370	3.42	74.5	909.0	26.2	800
Oct	5120	2.92	140.95	1.58	1240	3.93	73.2	654.3	21.1	594
Nov	3210	2.51	83.18	2.0	1540	3.85	70.6	435.1	24.9	349
Dec	1960	2.73	45.89	1.61	1570	4.73	70.7	245.0	24.8	190
Jan 1951	3930	3.38	92.22	1.0	1260	6.30	71.3	404.4	17.4	370
Feb	3700	2.90	105.12	1.0	1210	6.05	70.5	433.2	15.6	404
Mar	3290	2.37	109.02	1.47	1280	4.35	68.5	440.8	16.0	420
Apr	3170	1.69	125.26	2.0	1500	3.75	69.3	577.5	19.2	557
May	3330	1.77	114.76	2.0	1650	4.12	68.3	598.0	22.2	769
June	3440	2.08	111.05	2.0	1550	3.97	67.5	528.3	22.6	470
Total	53640		1440.13					7140.7		6573**
Wt Avg***		2.59		1.71	1440	4.12	71.0		23.2	

* Equivalent number for operating hours in preceeding column.

** 5843 cu yd to City Parks

930 cu yd to Public

*** Based on accumulated totals for year.

